HANDBOOK

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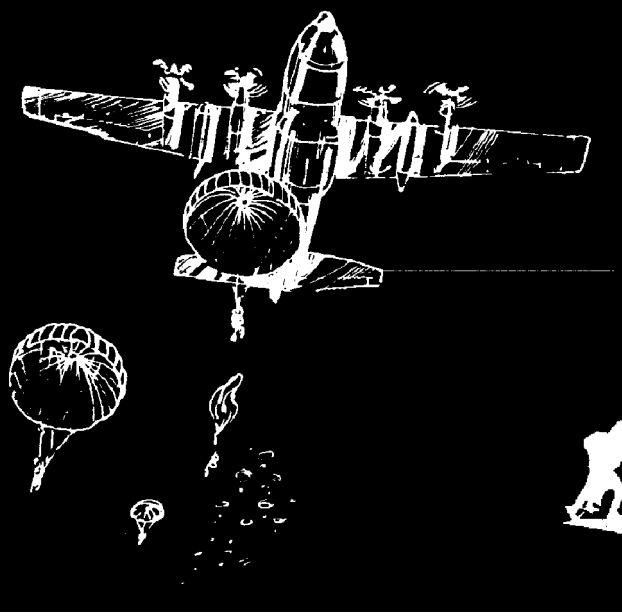
Own The Night!



SMALL UNIT NIGHT FIGHTER MANUAL

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INTRODUCTION

This Small Unit Night Fighter Handbook combines existing doctrine with night-fighting tactics, techniques, and procedures (TTP) currently used by light infantry squads and platoons. The dismounted battle drills found in ARTEP 7-8, *MTP DRILL,* form the basis for these TTP. The drills in Chapter 2 incorporate existing technology with current doctrine to overcome limiting factors experienced by soldiers and leaders at night. The result is a modified mission training plan for squad and platoon battle drills that enhance the unit's ability to fight at night as well as deny the enemy his night capabilities or advantages.

These drills form the basis for a unit training plan. The techniques that are incorporated into the drills must be modified as the situation dictates, and may vary with individual unit SOPs. The leader's METT-T analysis (referred to throughout this document as MTETT (mission, terrain, enemy, troops and time available)) must also take into consideration the enemy's night vision capabilities, and the availability of equipment referenced in these drills.

This newsletter is designed for your use and dissemination. If your unit has identified other relevant lessons or information, please share them with the rest of the U.S. Army by contacting CALL at DSN 552-2255 or 3035, FAX DSN 552-9564, or commercial (913) 684-9564. Our E-Mail address is: call@leav-emh1.army.mil and our WWW home page is: http://call.army.mil:1100/call.html. Be sure to include your phone number and complete address.

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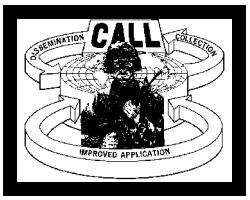

Own The Night!
SMALL UNIT NIGHT FIGHTER MANUAL

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Unless otherwise stated, whenever the masculine or feminine gender is used, both are intended.

NOTE: Any publications referenced in this handbook (other than the CALL newsletters), such as ARs, FMs, TMs, must be obtained through your pinpoint distribution system.

LOCAL REPRODUCTION OF THIS HANDBOOK IS AUTHORIZED AND ENCOURAGED!

CHAPTER 1
NIGHT FIGHTING AT THE SMALL UNIT LEVEL

"Success in a night attack depends largely upon direction, control and surprise. The thousand and one contingencies that an attack by night gives rise to must be foreseen and provided for. Especially must careful provision be made for maintaining direction, for preserving control and for ensuring secrecy. Owing to the power of modern armament, night attacks will probably be more frequent in future conflicts. Particularly will darkness aid in the passage of areas that enemy fire." ***- Chapter XXV, Infantry In Battle -***

1. **GENERAL.** Many of the world's armies and militias possess some kind of night-fighting equipment, ranging from high-tech radars to sophisticated night vision goggles. It is relatively easy to procure most of this equipment at reasonable rates on the world market. To ***"own the night"*** requires tactics, techniques, and procedures (TTP) that maximize our night-fighting technological advantages while countering the enemy's night capabilities.

2. COMMAND AND CONTROL (C^2).

a. C^2 is the most important factor in night fighting. Its purpose is to synchronize fires and maneuver at the decisive point. The endstate is to destroy the enemy without committing fratricide. To achieve this endstate, all soldiers must operate as efficiently at night as during the day. Moreover, leaders must master night C2 TTP.

b. The TTP covered in this manual require leaders to acquire the targets with AN/PVS-7B goggles, point out the targets with the AN/PAQ-4 or a hand-held laser designator, and control fires. These tasks, coupled with the "normal" confusion of the battlefield, can amount to greater confusion when not applied properly. After testing this TTP in a STX scenario, it was determined that hand-held laser pointers should not be issued down to team leader level because too many lasers on the battlefield confused C2 in the infrared (ir) spectrum. Team leaders can use AN/PAQ-4 and tracers to designate targets for their soldiers. Squad leaders and above can use hand-held laser pointers to facilitate C^2. Leaders determine when it is appropriate to employ hand-held laser pointers, ir flares, or ir signaling devices.

c. Leaders must consider the enemy's night-fighting capability before executing a battle drill. The technology on hand must be applied in a manner consistent with the situation encountered on the battlefield. For example, in a scenario where the enemy has a night-vision capablility, you must choose C^2 techniques that employ ir emitters in moderation. In a situation where the enemy has no night-vision capability, unrestrained use of the ir spectrum is possible. However, even in the latter case, you must plan in detail the C2 measures you plan to employ in the ir spectrum.

d. Light discipline takes on a new and challenging dimension in the ir spectrum. Current technology does not allow for the detection of colors in the ir spectrum. The ir lights differ only by intensity and size. Leaders must be ingenious in the application of ir technologies to mark soldiers, unit positions, etc.

e. The drills enclosed in this document call for the employment of certain pieces of equipment. Leaders decide whether the use of the technology is appropriate***DO NOT*** employ the technology just because the drill employs a specific TTP. Use your brain. Analyze the uniqueness of the situation you face. Let experience guide you.

3. **TRAINING**.

a. ***Training Strategy.*** Training is the key to mastering the night battle drills. Although these battle drills do not deviate from **ARTEP 7-8, *MTP DRILL,*** significantly, there are numerous night unique critical leader and soldier tasks that you must master. To be an effective fighting force, leaders must continually train these drills and refine the TTP and their unit night-fighting SOPs. The Division's Own the Night (OTN) Individual Training Program is designed to ensure all paratroopers are proficient in the individual skills fundamental to owning the night. You, the leader, must leverage off that training and ensure that your squad/platoon is proficient in the collective TTP required to own the night. Just wearing AN/PVS-7s does not equate to owning the nigh**Owning the night begins with you. Train to *MOVE, SHOOT, and COMMUNICATE* at night.** Include the following in your training:

(1) Maintain Night-Vision Goggles and Devices.
(2) Operate Night-Vision Goggles and Devices.
(3) Detect, Recognize, and Identify Targets with Devices/Goggles.
(4) Acquire Targets with the devices.

b. ***OTN Individual Training Program.*** The Division's OTN individual program provides outstanding guidelines for training individual soldiers in the individual skills required to own the night. The program consists of unaided night-vision training, aided night-vision training, a marksmanship confidence exercise, and a drivers' training program. This program gives soldiers confidence in their night-fighting equipment. This program is an annual requirement for all soldiers. After soldiers complete this program, they possess the fundamental skills necessary to operate efficiently and effectively at night.

4. **ORGANIZATION.** The organization of the eight battle drills outlined in this manual are in accordance with **ARTEP 7-8, *MTP DRILL.***

a. ***Task.*** The task is the title as well as the collective task to be performed.

b. ***Conditions.*** The conditions are the statements of the situation or the environment in which the unit is experiencing while executing the drill. In these drills we assume that the unit must perform the task at night and that the enemy may have limited night-vision capabilities.

c. ***Standards.*** Criteria for success.

d. ***Performance Measures.*** The performance measures are a sequential listing of the leader and collective tasks that must be performed to execute the drill to standard. These subtasks are observable and measurable. The tasks, in addition to those outlined in **ARTEP 7-8, *MTP DRILL,*** include the following:

(1) Operate AN/PVS-7/4.
(2) Zero AN/PAQ-4 to M16, M249, M60.
(3) Engage Targets with AN/PAQ-4 and AN/PVS-7/4.
(4) Control Organic Fires with Hand-held Laser Pointers.
(5) Operate Ir Target Pointer/Illuminator GCP-1A.
(6) Navigate while Wearing AN/PVS-7B.

The remaining tasks are outlined in **ARTEP 7-8, *MTP Drill.*** The only addition is the night-time condition.

CHAPTER 2

SQUAD AND PLATOON BATTLE DRILLS

BATTLE DRILL 1A
CONDUCT SQUAD ATTACK

TASK. Conduct Squad Attack (7-4-D101).

CONDITIONS. The squad is moving as part of a platoon conducting a movement to contact or hasty or deliberate attack. The enemy has indirect fire and CAS capabilities.

STANDARDS.

1. The squad is not surprised or fixed by the enemy.
2. Squad members locate and engage known or suspected enemy positions with well-aimed fire.
3. The squad kills, captures, or forces the withdrawal of the enemy.

PERFORMANCE MEASURES.

1. ***Action on Enemy Contact.***

a. Soldiers receiving fire take up the nearest positions that afford them protection from enemy fire (cover) and observation (concealment).

b. The fire team in contact immediately returns a heavy volume of suppressive fire in the direction of the enemy. It attempts to achieve suppressive fires. The team providing suppressive fires marks its flanks by throwing ir chemlight bundles or ir flares and continues to use AN/PVS-7B and AN/PAQ-4 to place well-aimed, accurate fires on the enemy. The squad employs M203 and hand-held ir smoke to screen the assaulting team's movement.

(1) Soldiers in the fire team in contact move to positions (bound or crawl) from which they can fire their weapons, and position themselves to ensure they have observation, fields of fire, cover, and concealment. They continue to fire and report known or suspected enemy positions to the fire team leader.

(2) The team leader directs fires using tracers, AN/PAQ-4, or standard fire commands.

(3) The fire team not in contact takes covered and concealed positions in place and observes to the flanks and rear of the squad using night vision goggles and sights.

(4) The squad leader assesses the situation. He reports contact to the platoon leader and moves toward the fire team in contact.

2. ***Locate the Enemy.***

a. Using AN/PVS-7B, AN/PVS-4, AN/PAQ-4 and ir flares, the fire team in contact acquires known and suspected enemy position(s).

b. The fire team leader in contact begins to facilitate Ćby directing fires with his AN/PAQ-4 and tracers. He directs his team to mark the flanks by throwing ir chemlight bundles or ir flares to help the trail fire team*SEE* the location of friendly troops.

c. The squad leader uses his AN/PVS-7B to help him see as he moves into a position where he can observe the enemy and can assess the situation. He uses his hand-held laser pointer to illuminate the objective area to identify key enemy positions (based on MTETT). He uses ir illumination (hand-held or mortars) to silhouette the enemy positions.

d. The squad leader requests, through the platoon leader, immediate suppression indirect fires.

e. The squad leader reports the size and location, and any other information to the platoon leader.

3. ***Suppress the Enemy.***

a. The squad leader determines if the fire team in contact can gain suppressive fire based on the volume and accuracy of enemy fire. If the answer is yes, the fire team continues to suppress the enemy.

(1) The fire team destroys or suppresses enemy crew-served weapons first. The fire team leader identifies enemy positions and controls his fire team using the AN/PAQ-4 and/or tracers. He illuminates the target area using hand-held ir flares (MTETT).

(2) The fire team leader continues to control fires using AN/PAQ-4 and standard fire commands. Soldiers use AN/PVS-7Bs and AN/PVS-4s to deliver sustained, well-aimed fires.

(3) Buddy teams fire so that they are not reloading at the same time.

b. If the answer is no, the squad leader then deploys the fire team not in contact with the enemy to establish a support by fire position. He reports to the platoon leader. Normally, the squad will become the base of fire element for the platoon. The squad continues to shoot well-aimed fires at the enemy and responds to orders from the platoon leader. (The platoon leader, his RTO, the platoon FO, one machine gun team, the squad leader of the next squad, as well as the weapons squad leader and the other machine gun team, are already moving IAW Battle Drill 1, Conduct Platoon Attack, 7-3-D101.)

4. ***Attack.*** If the fire team in contact can suppress the enemy, the squad leader determines if the fire team not in contact can maneuver. He uses his AN/PVS-7B, hand-held laser pointer in wide angle, and/or ir flares to make the following assessments:

a. Location of enemy positions and obstacles.

b. Size of enemy force engaging the squad. (The number of automatic weapons, presence of enemy vehicles, and the employment of indirect fires are indicators of enemy strength.)

c. Vulnerable flank.

d. Covered and concealed flanking route to the enemy position.

e. If the answer is yes, the squad leader maneuvers the fire team in the assault.

(1) The squad leader directs the fire team in contact to support the movement of the other fire team and helps them SEE by illuminating the target area with his hand-held laser pointer and/or ir flares.

(2) The squad leader SEEs with AN/PVS-7B to control the maneuver of the squad. He uses his hand-held laser pointer to guide the maneuver of the fire team not in contact. Using his pointer, he shows the team leader the following:

(a) Enemy positions and obstacles.

(b) A vulnerable flank.

(c) A covered and concealed route to the flank.

(d) If required, the squad leader illuminates the area with his hand-held laser pointer on wide angle.

(3) The fire team leader in contact SEEs the squad leader's laser through his AN/PVS 7B and follows the commands given by the squad leader.

(4) The fire team in contact:

(a) SEEs the team leader's AN/PAQ-4 laser and tracers through his AN/PVS-7B. Team members guide in on the team leader's laser and place well-aimed fires against the enemy positions.

(b) The team leader continues to mark high pay off targets with his AN/PAQ-4.

(5) The squad leader provides C2 by directing the fire team in contact to support the movement of the other team. He uses the laser pointer to first designate the left and the right limits of supporting fires, then he uses the laser to show both team leaders the movement route of the maneuver team.

(6) The squad leader requests indirect fires to destroy and isolate enemy positions.

(7) The squad leader uses AN/PVS-7B to see as he leads the assaulting team along the covered and concealed route to the flank of the enemy position.

(8) Upon reaching the last covered and concealed position:

(a) The squad leader positions himself where he can best control his teams.

(b) The squad leader provides Ć signal (ir flares) to the fire team in support to lift or shift fires away from the assaulting team.

(c) The assaulting fire team assaults the enemy position from the blind side and does not mask the fire of the team in support.

(d) Soldiers constantly watch for enemy positions and other enemy positions in support of those positions.

(9) The squad leader inspects the area using AN/PVS-7B and ir flashlight, ir source on his AN/PVS-7s, or his hand-held laser pointer to ensure that the enemy is destroyed and reports and reorganizes as needed to continue the mission.

5. ***Consolidate and Reorganize.***

a. Once the assaulting fire team has seized the objective, the squad leader establishes local security.

(1) The squad leader employs an ir signal for the support team to move into a designated position.

(2) The squad leader designates left and right limits of fire using his hand-held laser pointer.

(3) The squad leader positions key weapons.

(4) All soldiers occupy hasty defensive positions.

(5) The squad leader develops an initial fire support plan against an enemy counterattack.

(6) The squad leader posts an OP to provide early warning.

b. The squad performs the following tasks:

(1) Reestablish the chain of command.

(2) Redistribute and resupply ammunition.

(3) Man crew-served weapons first.

(4) Redistribute critical equipment, to include night-fighting equipment.

(5) Treat casualties and evacuate wounded.

(6) Fill key vacant positions.

(7) Search, silence, segregate, safeguard, and speed EPWs to collection points.

(8) Collect and report enemy information and material.

c. Team leaders provide ammunition, casualty, and equipment reports to the squad leader.

d. The squad leader consolidates the ACE report and passes it to the platoon leader or platoon sergeant.

e. After receiving instructions from the platoon leader, the squad continues the mission.

f. The squad leader reports the situation to the platoon leader✪

BATTLE DRILL 1
CONDUCT PLATOON ATTACK

TASK. Conduct Platoon Attack (7-3-D101).

CONDITIONS. An enemy squad has occupied defensive positions or is moving to the platoon front. The enemy has indirect fire and CAS capabilities. The platoon is attacking separately or as part of a larger unit. Plans, preparation, and movement to the objective have been accomplished. The platoon is directed to attack the enemy.

STANDARDS.

1. The platoon main body is not surprised or fixed by the enemy.
2. The platoon accomplishes its assigned task within the commander's intent. The platoon kills, captures, or forces the withdrawal of the enemy.
3. The platoon maintains a sufficient fighting force to defeat the enemy's counterattack and continue operations.

PERFORMANCE MEASURES.

1. ***Action on Enemy Contact.***

a. The platoon initiates contact. The platoon leader directs when and how his base of fire element will establish a base of fire. The element must be in position and briefed before it initiates contact. The base of fire squad leader (normally the weapons squad leader), upon the signal from the platoon leader, initiates contact with a high casualty-producing weapon. The squad marks the engagement area with ir illumination (MTETT dependent), while the squad leader uses his hand-held laser pointer and AN/PAQ-4 to designate enemy positions, crew-served weapons, and vehicles. Soldiers focus on the squad leader's laser as well as the team leader's tracers and AN/PAQ-4 to engage targets. If the platoon has not been detected, steps 1 and 2 consist of positioning the support element and identifying the enemy's positions.

b. If the enemy initiates contact, the platoon takes the following actions:

(1) The squad in contact reacts to contact (Battle Drill No. 2, React to Contact Platoon/Squad, 7-3/4-D103). It attempts to achieve suppressive fires with one fire team and maneuvers the other team to attack the enemy in the flank. The team providing suppressive fires marks its flanks by throwing ir chemlight bundles or ir flares and continues to use its AN/PVS-7B and AN/PAQ-4 to place well-aimed, accurate fires on the enemy. The squad employs M203 and hand-held ir smoke to screen the assaulting teams movement. The squad leader notifies the platoon leader of his actions.

(2) The platoon leader, his RTO, the platoon FO, the squad leader of the next squad, and one machine gun team move forward to link up with the squad leader of the squad in contact.

(3) The squad leader of the trail squad moves to the front of his lead fire team.

(4) The platoon sergeant moves forward with the second machine gun team and the weapons squad leader and links up with the platoon leader. If directed, he assumes control of the base of fire element and positions the machine guns to add suppressive fire against the enemy. The platoon sergeant uses his hand-held laser to designate the left and right limits of fires while the weapons squad leader uses the pointer to designate targets.

(5) The platoon leader assesses the situation. He follows the success of the squad's flank attack by leading the trail squads along the covered and concealed route taken by the assaulting fire team of the squad in contact. The base of fire element uses the AN/PVS-7B to monitor the movement of the assaulting element.

c. If the squad in contact cannot achieve suppressive fire, the squad leader reports to the platoon leader.

(1) The squad in contact establishes a base of fire.

(a) The squad leader deploys his squad to provide effective, sustained fires on the enemy position. The squad leader continues to designate targets using the hand-held laser pointer and AN/PAQ-4 while soldiers SEE through their AN/PVS-7B and place accurate fires on the enemy with the AN/PAQ-4.

(b) The squad leader reports his final position to the platoon leader.

(2) The remaining squad (not in contact) takes up covered and concealed positions in place and uses the AN/PVS-7B to observe the flanks and rear of the platoon.

(3) The platoon leader moves forward with his RTO, the platoon FO, the squad leader of the nearest squad, and one machine gun team.

2. ***Locate the Enemy.***

a. The squad leader of the squad in contact reports the enemy size, location, and any other information to the platoon leader. The platoon leader completes the squad leader's assessment of the situation.

b. The squad continues to engage the enemy positions and mark the engagement area with ground ir flares, tracers, and AN/PAQ-4.

c. The platoon sergeant moves forward with the weapons squad leader and the second machine gun team and links up with the platoon leader.

3. ***Suppress the Enemy.***

a. The platoon leader determines if the squad in contact can gain suppressive fire against the enemy, based on the volume and accuracy of the enemy's return fire. He SEEs through the AN/PVS-7B and makes the assessment by looking at the enemy's muzzle flashes and the strike of their rounds and tracers.

b. If YES, he directs the squad (with one or both machine guns) to continue suppressing the enemy:

(1) The squad in contact destroys or suppresses enemy weapons that are firing most effectively against it, normally crew-served weapons. The squad leader identifies the enemy crew-served by its muzzle flashes and rate of fire. He uses his hand-held laser pointer to designate priority targets for his squad.

(2) In addition, the squad in contact continues to place ir screening smoke (if enemy has NODs) to prevent the enemy from seeing the maneuver element.

c. If NO, the platoon leader deploys another squad and the machine gun team to suppress the enemy position. The second squad lead elements SEE the base of fire squad flank element's ir chemlights or flares through the AN/PVS-7B and links up either to the left or right flank of the base of fire squad as directed by the platoon leader. (The platoon leader may direct the platoon sergeant to position this squad and one or both of the machine gun teams in a better support-by-fire position.)

d. The platoon leader again determines if the platoon can gain suppressive fire over the enemy.

e. If YES, he continues to suppress the enemy with two squads and two machine guns.

(1) The platoon sergeant assumes control of the base-of-fire element (squad in contact, the machine gun teams, and any other squad designated by the platoon leader). He uses his hand-held laser pointer to designate sectors of fire for the squads.

(2) The machine gun team occupies a covered and concealed position and suppresses the enemy position. The gunners SEE through the AN/PVS-4 and identify the targets designated by the weapons squad leader's laser.

f. The platoon FO calls for and adjusts fires, based on the platoon leader's directions. (The platoon leader does not wait for indirect fires before continuing with his actions.)

g. If still NO, the platoon leader deploys the last squad to provide flank and rear security and guide the rest of the platoon forward as necessary, and reports the situation to the company commander. Normally, the platoon will become the base of fire element for the company and may deploy the last squad for suppressive fires. The platoon continues to suppress/fix the enemy with direct and indirect fire, and responds to orders from the company commander.

4. ***Attack.***

a. If the squad(s) in contact together with the machine gun can suppress the enemy, the platoon leader determines if the remaining squad(s) not in contact can maneuver. He makes the following assessment using his AN/PVS-7:

(1) Location of enemy positions and obstacles.

(2) Size of enemy force. (The number of enemy automatic weapons, presence of any vehicles, and employment of indirect fire are indicators of enemy strength.)

(3) Vulnerable flank.

(4) Covered and concealed flanking route to the enemy position.

b. If yes, the squad leader maneuvers the squad(s) into the assault:

(1) Once the platoon leader has ensured the base of fire squad is in position and providing suppressive fires, he leads the assaulting squad(s) to the assault position.

(2) Once in position, the platoon leader gives the prearranged signal for the base of fire squad to lift or shift direct fires to the opposite flank of the enemy position. The signal is normally FM or an ir signaling device. The assault squad leader identifies the targets (enemy positions) that have been designated by the support by fire squad leader through his AN/PVS-7B. Simultaneously, at the platoon leader's command for the support by fire squad to lift or shift, the assault squad leader uses his hand-held laser pointer to point out the targets. Team leaders use AN/PAQ-4 to control fires. The assault squads MUST pick up and maintain effective fire throughout the assault. Handover of responsibility for direct fires from the base of fire squad to the assault squad is critical to prevent fratricide.

(3) The platoon FO shifts indirect fires (including smoke) to suppress the enemy position.

(4) The assaulting squad(s) fight through enemy positions using fire and maneuver.

(5) The platoon leader controls the movement of his squads. He uses his hand-held laser pointer to assign specific objectives for each squad and designates the main effort or base maneuver element. (The base of fire squad must be able to identify the near flank of the assaulting squads.) Flanks are marked with ir chemlight bundles, ir flares, or phoenix beacons.

NOTE: The use of the hand-held laser pointer requires moderation because it can cause confusion as well as identify friendly positions for an enemy with night-vision capabilities. The laser should not be on for a period greater than three seconds when used.

(a) The squad leader determines the way in which he will move the elements of his squad based on the volume and accuracy of enemy fire against his squad and the amount of cover provided by terrain. In all cases, each soldier uses individual movement techniques as appropriate.

(b) The squad leader designates one fire team to support the movement of the other fire team.

(c) The squad leader designates a distance or direction for the team to move. He accompanies one of the fire teams.

(d) Soldiers SEE with the AN/PVS-7B and maintain contact with team members and leaders.

(e) Buddy teams time their firing and reloading to sustain their rate of fire.

(f) The moving fire team proceeds to the next covered position, using the wedge formation.

(g) The squad leader directs the next team to move using an ir signal.

(h) When the squad leader or team leader determines that moving by teams is no longer feasible, fire teams continue forward in buddy teams. Soldiers continue to use AN/PVS-7B and AN/PAQ-4 to place accurate fires on the enemy as well as identify/point out targets previously identified by their team leaders.

(1) Soldiers maintain contact with their buddies.

(2) Soldiers fire from covered positions, SEE with the AN/PVS-7B and select the next covered position before moving. They either rush forward (no more than 5 seconds) or use the high crawl or low crawl techniques, based on terrain and enemy fires.

(i) Fire team leaders maintain contact with the squad leaders and pass signals to team members.

c. If NO, or the assaulting squads cannot continue to move, the platoon leader deploys the squad(s) to suppress the enemy and reports to the company commander.

5. ***Consolidate and Reorganize.***

a. For consolidating once squads have seized the enemy position, the platoon leader establishes local security. (The platoon must plan to defeat any enemy counterattack. At the conclusion of the assault, the platoon is most vulnerable.)

(1) The platoon leader signals for the base of fire squad to move into designated positions.

(2) The platoon leader assigns sectors of fire for each squad using his laser pointer.

(3) The platoon leader positions key weapons to cover the most dangerous avenues of approach.

(4) The platoon sergeant begins coordination for ammunition resupply.

(5) Soldiers occupy hasty defensive positions.

(6) The platoon leader and his FO develop a quick fire plan.

(7) The squad leader places OPs to detect enemy counterattacks. When an armor or mounted threat is likely, use the AN/TAS-5A in OPs.

b. To reorganize, the platoon performs the following tasks (only after it completes consolidation on the objective):

(1) Re-establish chain of command.

(2) Redistribute and resupply ammunition.

(3) Man crew-served weapons first.

(4) Redistribute critical equipment (radios, NBC, NVD, Laser Pointer).

(5) Treat casualties and evacuate wounded.

(6) Fill vacancies in key positions.

(7) Search, silence, segregate, safeguard, and speed EPWs to collection points.

(8) Collect and report enemy information and material.

c. Squad leaders provide ammunition, casualty, and equipment (ACE) reports to the platoon leader.

d. The platoon leader consolidates ACE reports and passes them to the company commander (or Executive Officer).

e. The platoon continues the mission after receiving guidance from the company commander. The company follows the success of the platoon's flanking attack✪

BATTLE DRILL 2
REACT TO CONTACT

TASK. React to Contact (Platoon/Squad) (7-3/4-D103).

CONDITIONS. The platoon/squad is halting or moving. The enemy initiates fires on the platoon/squad with an individual or crew-served weapon.

STANDARDS.

1. The unit returns fire immediately.
2. The unit locates and engages the enemy with well-aimed fire, and causes at least one enemy casualty.
3. The leader can point out at least one half of the enemy positions and identify the types of weapons (such as small arms, light machine gun).

PERFORMANCE MEASURES.

1. Soldiers SEE through AN/PVS-7B/4 and immediately take up the nearest covered positions.

2. Soldiers SEE the enemy positions and enemy weapons muzzle flashes through their AN/PVS-7B/4 and use their AN/PAQ-4 to return well-aimed fires at the target within three seconds.

3. Squad leader locates known or suspected enemy positions and marks left and right limits with the hand-held laser pointer, and passes information to the squad/platoon leader.

4. Fire team leaders control fires by using the standard fire commands (initial and supplemental). Team leaders use AN/PAQ-4 and BOIs (based on distance) to control fires, and illuminate engagement areas by using ir ground flares. The fire commands are as follows:
   a. Alert.
   b. Direction.
   c. Description of target.
   d. Range.
   e. Method of Fire (manipulation, and rate of fire).
   f. Command to commence firing.

5. Soldiers SEE and maintain contact with other soldiers on their left and right using AN/PVS-7B/4. Mark soldiers IAW unit SOP.

6. Soldiers maintain contact with their team leaders and indicate the location of the enemy using the AN/PAQ-4 and AN/PVS-7B.

7. Leaders check the status of their personnel through voice commands and AN/PVS-7B.

8. The squad/team leaders maintain contact with the platoon/squad leader through the AN/PVS-7B.

9. The platoon/squad leader moves up to the squad/team in contact and links up with its leader.

a. The platoon leader brings his RTO, platoon FO, the squad leader of the nearest squad, and one machine gun team.

b. The squad leader of the trail squad moves to the front of his lead fire team.

c. The platoon sergeant and weapons squad leader move forward with the second machine gun team and link up with the platoon leader, ready to assume control of the base of fire element.

10. The platoon/squad leader determines whether or not his platoon/squad must move out of the engagement area.

11. The platoon/squad leader determines whether or not he can gain and maintain suppressive fires with the element already in contact (based on the volume and accuracy of the enemy fires against the element in contact).

12. The platoon/squad leader makes an assessment of the situation. He identifies:

a. The location of the enemy position and obstacles guiding on the hand-held laser, and AN/PAQ-4 from the squad/team in contact.

b. The size of the enemy force by assessing the enemy's volume of fire, and muzzle flashes looking through his AN/PVS-7B (the number of enemy automatic weapons, the presence of any vehicles and the employment of indirect fire are indicators of the enemy’s strength).

c. Vulnerable flanks.

d. Covered and concealed flanking routes to the enemy position.

13. Determines the next course of action (for example, fire and movement, assault, breach, knock out bunker, enter and clear a building or trench).

14. The platoon/squad leader reports the situation to the company commander/platoon leader and begins to maneuver the unit.

15. The platoon/squad leader calls for and adjusts indirect fire (mortars or artillery). (Squad leaders relay requests through the platoon leader.)

16. Leaders relay all commands and signals from the platoon chain of command.

BATTLE DRILL 3
BREAK CONTACT

TASK. **Break Contact (platoon/squad) (7-3/4-D104).**

CONDITIONS. The platoon/squad is moving or stationary. The enemy fires on the platoon/squad. The platoon/squad leader orders the platoon/squad to break contact.

STANDARDS. The unit moves to where the enemy cannot observe or place direct fire on it.

PERFORMANCE MEASURES.

1. The platoon/squad leader directs one squad/fire team in contact to support the disengagement of the remainder of the unit. The squad leader in contact uses his hand-held laser pointer to designate enemy positions. Team leaders employ ir flares to illuminate the engagement area and the AN/PAQ-4 to mark targets. The flank elements throw ir grenades or ir chemlight bundles to mark the flanks.

2. The platoon/squad leader orders a distance and direction, or a terrain feature, or last objective rally point for the movement of the first squad. The platoon/squad leader uses his hand-held laser pointer to control the movement of the first squad/fire team.

3. The base of fire squad/team continues to suppress the enemy with a high volume of fire using the AN/PAQ-4 and AN/PVS-7B to engage. The squad leader uses his laser pointer to control fires and designate the left and right limits.

4. The moving squad/fire team assumes the overwatch position. The squad uses fragmentation, concussion, and ir smoke grenades (MTETT) to mask its movement.

5. The moving squad/fire team takes up the designated position. The squad/team leader, through his AN/PVS-7B, identifies the engagement area and the enemy positions marked by the base of fire squad leader's hand-held laser pointer and the soldiers' and team leader's AN/PAQ-4 laser. He also identifies the friendly squad/team in contact and confirms the location of its flank elements. The squad leader uses his own hand-held laser pointer to designate the left and right limits of the engagement area and the enemy positions already identified by the squad/team in contact. The squad leader orders the squad to engage. Team leaders issue fire commands and control their teams' fires through the use of AN/PAQ-4 and AN/PVS-7B.

6. The platoon/squad leader directs the base-of-fire element to move to its next location. The squad leader uses his hand-held laser pointer to direct the movement of his squad. Through his AN/PVS-7B, he guides in on the platoon leader's hand-held laser pointer to his squad's designated position. Based on the terrain and the volume and accuracy of the enemy's fire, the moving squad may need to use fire and movement techniques.

7. The platoon/squad continues to bound away from the enemy until:

a. It breaks contact (the platoon/squad must continue to suppress the enemy as it breaks contact).

b. It passes through a higher level support-by-fire position.

c. Its squads/fire teams are in the assigned position to conduct the next mission.

8. The leader should consider changing his unit's direction of movement once contact is broken. This will reduce the enemy's ability to place effective indirect fire on the unit.

9. If the platoon or squad becomes disrupted, soldiers stay together and move to the next designated rally point.

10. The platoon/squad leaders account for soldiers, report, reorganize as necessary, and continue the mission✪

BATTLE DRILL 4
REACT TO AMBUSH

TASK. React to Ambush (platoon/squad) (7-3/4-D105).

CONDITIONS. The platoon/squad is moving. The platoon/squad is in a prepared kill zone. The enemy initiates the ambush with a casualty-producing device, and a high volume of fire.

STANDARDS.

1. **Near ambush.**

a. Soldiers in the kill zone immediately return fire, take up covered positions, and throw fragmentation grenades or concussion and smoke grenades. Immediately after the grenades detonate, soldiers in the kill zone assault through the ambush using fire and movement.

b. Soldiers not in the kill zone locate and place suppressive fire on the enemy, take up covered positions and shift fire as the assault begins.

2. **Far ambush:**

a. Soldiers in the kill zone immediately return fire and take up covered positions. The leader identifies the enemy's location and soldiers place accurate suppressive fire on the enemy's position.

b. Soldiers not in the kill zone begin fire and movement to destroy the enemy.

c. The unit moves out of the kill zone, forces the enemy to withdraw, or destroys the ambush.

PERFORMANCE MEASURES.

1. In a near ambush (within hand grenade range):

a. Depending on terrain, soldiers in the kill zone carry out one of the following two actions:

(1) SEE the enemy with AN/PVS-7B and return fire immediately using the AN/PAQ-4. If cover is not available, immediately, without order or signal, assume the prone position, and throw fragmentation, concussion, and smoke grenades.

(2) SEE the enemy with AN/PVS-7B and return fire immediately using the AN/PAQ-4. If cover is available, without order or signal, seek the nearest covered position, and throw concussion or fragmentation and smoke grenades.

b. Immediately after the grenades detonate, soldiers in the kill zone return fire and assault through the ambush position using fire and movement.

c. Soldiers not in the kill zone immediately:

(1) Identify enemy positions by looking through their AN/PVS-7B for muzzle flashes.

(2) Initiate accurate suppressive fires against the enemy. Leaders use AN/PAQ-4 and hand-held laser pointers to control fires and assign targets.

(3) Under the control of the squad leader, soldiers shift fires as the soldiers in the kill zone begin to assault through the ambush.

d. Soldiers in the kill zone continue the assault to eliminate the ambush or until contact is broken.

e. The platoon/squad conducts consolidation and reorganization.

2. In a far ambush (beyond hand grenade range):

a. Soldiers receiving fire immediately return fire, take up a covered position and suppress the enemy by:

(1) Destroying or suppressing enemy crew-served weapons. Squad lead use their hand-held laser pointer to designate the enemy's crew-served positions.

(2) Sustaining suppressive fires.

b. Soldiers/squads not receiving fires move by a covered and concealed route to a vulnerable flank of the enemy position and assault using fire and movement techniques

c. Soldiers in the kill zone continue suppressive fires. Leaders continue to identify the engagement area by using hand-held laser pointers, and ground illumination flares. The team or squad leader in the kill zone identifies the flank elements and leaders of the assaulting force get within the minimum safe distance of the surface danger area. The squad leader orders his squad to shift fires as the assaulting squad fights through the enemy position.✪

BATTLE DRILL 5A
KNOCK OUT A BUNKER

TASK. **Knock Out a Bunker (Squad) (7-4-D107).**

CONDITIONS. Squad receives fire from an enemy bunker while moving at night as part of a larger force.

STANDARDS.

1. The squad destroys the designated bunker by killing, capturing, or forcing the withdrawal of enemy personnel in the bunker.
2. The squad maintains sufficient fighting force to defeat the enemy's counterattack and continue operations.
3. No fratricide.

PERFORMANCE MEASURES.

1. The squad reacts to contact (Battle Drill No. 2).

2. The fire team leader in contact identifies the bunker through his AN/PVS-7B and places well-aimed fire on the bunker using his AN/PAQ-4 and tracers. If required, the team leader employs ir illumination flare to the rear of the bunker to silhouette it (MTETT).

3. Squad members suppress the bunker with well-aimed fires using their AN/PVS-7B and AN/PVS-4.

4. The squad leader SEEs the bunker and the surrounding terrain through his AN/PVS-7B to determine how he can best maneuver the trailing fire team. He uses his hand-held laser pointer to show the squad the following:
   a. The bunker and any obstacles.
   b. The size of the enemy engaging the squad.
   c. A vulnerable flank.
   d. A covered and concealed route.
   e. Left and right limits for the support fire team.
   f. If required, the squad leader illuminates the bunker with his hand-held laser pointer on wide angle.

5. The fire team leader in contact SEEs the squad leaders direction with his AN/PVS-7B.

6. The fire team in contact provides the following:

a. Team members guide on their team leader's AN/PAQ-4 and tracers. Using their own AN/PVS-7B and AN/PAQ-4, they place well-aimed, suppressive fires on the bunker and any other supporting positions.

b. The squad leader continues to command and control, using his hand-held laser pointer to show high priority targets or to illuminate the target area for the squad.

7. The squad leader controls the fires of the team in contact with his hand-held laser pointer. He shows his team leaders and squad the following:

a. The movement route of the maneuver fire team.

b. Assigns left and right limits of fire for the supporting fire team.

8. The squad leader requests indirect fires to destroy or isolate the enemy position.

9. The squad leader uses his AN/PVS-7B to lead the assaulting team along a covered and concealed route to the flank of the bunker.

10. Upon reaching the last covered and concealed position:

a. The squad leader positions himself where he can best command and control his teams and uses ground ir flares to mark the flank closest to the bunker.

b. The squad leader provides C² signal (ir flare or hand-held laser pointer) to lift or shift fires to the opposite side of the assaulting team's approach.

c. The supporting fire team leader uses his AN/PAQ-4 to control the shifting of suppressive fires to the opposite side of the assaulting fire team's approach.

d. The supporting fire team leader signals (with ir flares or visual signal) to the squad leader that the fires are lifted or shifted.

e. The assaulting fire team assaults the bunker from the blind side and does not mask the fires of the fire team in support.

f. Soldiers SEE through their AN/PVS-7B and continuously scan for other enemy supporting positions.

g. While the squad leader is illuminating the bunker with his hand-held laser pointer (MTETT), the team leader and a rifleman maneuver to the blind side of the bunker. They take up a position next to the bunker. The rifleman cooks off a grenade and yells, “Frag Out,” then throws it through the aperture.

h. After the grenade detonates, the assaulting team leader enters the bunker and fires short bursts into the bunker to destroy remaining enemy in it.

11. The squad leader inspects the bunker with an ir flashlight (or ir source on NODs) to ensure it is cleared. He places a chemlight (mounted on a stake or stick) into the top of the bunker to mark it “cleared” for friendly forces. He reports, reorganizes, and continues the mission.

BATTLE DRILL 5
KNOCK OUT BUNKERS

TASK. **Knock Out Bunkers (Platoon) (7-3-D106).**

CONDITIONS. The platoon receives fire from the enemy in bunkers, while moving as a part of a larger force.

STANDARDS.

1. The platoon destroys the designated bunker by killing, capturing, or forcing the withdrawal of enemy personnel in the bunker.
2. The platoon maintains a sufficient fighting force to defeat the enemy's counterattack and continue operations.

PERFORMANCE MEASURES.

1. The platoon reacts to contact IAW the standards for Battle Drill No. 2.

2. The squad in contact establishes a base of fire. The squad leader identifies the bunkers through his AN/PVS-7B and uses the hand-held laser pointer to designate targets and limits of fires. Team leaders use tracers and AN/PAQ-4 to identify targets for soldiers. Soldiers use AN/PVS-7B and AN/PAQ-4 to place accurate, suppressive fires on the enemy bunkers.

3. The platoon leader, his RTO, platoon FO, and one machine gun team move forward to link up with the squad leader of the squad in contact.

4. The platoon sergeant moves forward with the weapons squad leader and the second machine gun team and assumes control of the base-of-fire squad.

5. The base-of-fire squad:
   a. Destroys or suppresses enemy crew-served weapons identified by the squad leader.
   b. Sustains suppressive fires at the lowest possible level.

6. The platoon FO calls for and adjusts indirect fires as directed by the platoon leader.

7. The platoon leader determines that he can maneuver by identifying:

a. The enemy bunkers with the aid of his AN/PVS-7B and the laser of the squad leader in contact, other supporting position(s), and any obstacles.

b. The size of the enemy force engaging the platoon. (The number of enemy automatic weapons, the presence of any vehicles, and the employment for indirect fires are indicators of enemy strength.)

c. A vulnerable flank of at least one bunker.

d. A covered and concealed flanking route to the flank of the bunker.

8. The platoon leader determines which bunker is to be assaulted first and directs one squad (not in contact) to knock it out.

9. If necessary, the platoon sergeant repositions a squad, fire team, or machine gun team to isolate the bunker as well as to continue suppressive fire.

10. The assaulting squad, with platoon leader and his RTO, move along with covered and concealed route and take action to knock out the bunker (See Battle Drill No. 5A, Knock Out a Bunker).

a. On the platoon leader's signal, the support squad lifts or shifts fires to the opposite side of the bunker from which the squad is assaulting. The squad leader continues to control fires with his hand-held laser pointer. He ensures that suppressive fires stay 15 degrees from the lead element.

b. At the same time, the platoon FO shifts indirect fires to isolate enemy positions.

11. The assaulting squad leader reports to the platoon leader and reorganizes his squad.

12. The platoon leader:

a. Directs the supporting squad to continue and knock out the next bunker.

or

b. Directs the assaulting squad to knock out the next bunker.

NOTE: ***The Platoon leader must consider the condition of his assaulting squad (ammunition and exhaustion) and rotate squads as necessary.***

13. The platoon leader reports, reorganizes as necessary, and continues the mission. The company follows up the success of the platoon attack and continues to assault enemy positions.

BATTLE DRILL 6A
ENTER A BUILDING AND CLEAR A ROOM

TASK. Enter a Building and Clear a Room (Squad) (7-4-D109).

CONDITION. The squad is operating as part of a larger force. The squad is moving at night and receives enemy fires from a building.

STANDARDS.

1. The squad gains a foothold in the building.
2. The squad secures a room by killing, capturing, or forcing the enemy's withdrawal from the room.
3. The squad maintains a sufficient force to defeat the enemy counterattack and continues operations.

PERFORMANCE MEASURES.

1. The fire team that initiates contact guides in on the team leader's AN/PAQ-4 and tracers and suppresses the enemy in and surrounding the building using their AN/PVS-7B, AN/PVS-4, and AN/PAQ-4.

2. The squad leader SEEs the building through his AN/PVS-7B and with the help of his hand-held laser pointer on wide angle (MTETT):
   a. The building and any obstacles.
   b. Size of the enemy forces engaging the squad. (The number of crew-served weapons, vehicles, and use of indirect fire are indicators of the enemy's strength.)
   c. An entry point.
   d. A covered concealed route to the entry point.

3. The fire team in contact:

a. Destroys or suppresses enemy weapons that are firing most effectively against the squad.

b. The fire team leader in contact controls the fires of his team using the AN/PAQ-4, tracers, and standard fire commands. The squad leader designates left and right limits using the hand-held laser pointer.

4. The squad leader directs the fire team in contact to support the maneuver team. He facilitates C^2 by pointing out the following with his hand-held laser pointer:

a. Entry point of the building.
b. The left and right limits of fire for the support team.
c. A covered and concealed route to the entry way.
d. Locations of enemy forces and weapons systems.

5. If necessary, the supporting fire team repositions to isolate the building as well as continue suppressive fires on the enemy.

6. The squad leader signals for the supporting team to lift or shift fires to continue suppressive fires against adjacent positions/buildings.

7. The FO lifts or shifts indirect to adjacent positions/buildings.

8. The squad leader and the assaulting fire team use a covered and concealed route to approach the entry point and position on either side.

9. The lead soldier of the assaulting team cooks off a grenade and shouts, “Frag out,” then throws the grenade into the building (ROE dependent).

10. After the grenade has detonated, the next soldier enters the building with ir flashlight taped to the barrel of his weapon (or ir source on NODs). He positions himself to the left or right of the entrance against the wall and illuminates the area with the flashlight while simultaneously engaging identified or likely enemy positions with rapid, short bursts of automatic fire, and scans the room from left to right. The rest of the team provides immediate security around the building.

a. The size and shape of the room may cause the soldier entering the room to move to the left or right. For illustration purposes only, one set of directions is given. The first soldier in the room decides where the next soldier should position himself and gives the next command, **NEXT MAN, RIGHT OR LEFT.** All soldiers designated to enter or clear rooms should be task-organized with an ir flashlight.

b. Depending on the enemy situation, the size of entry, and the training of the squad, two soldiers can enter the room simultaneously after the grenade detonates. The soldier from the right side of the entry enters, fires from left to right, and moves to the right with his back to the wall. One soldier goes high, the other low, to prevent firing at each other.

c. Once in position the senior soldier in the room shouts, “next man in left (or right).” The next man shouts, “Coming in left (or right),” enters the room, positions himself to the left (or right) of the entrance, up against the wall, and scans from left to right. Once in position, he shouts, “Next man in left (or right).”

12. The assaulting fire team leader shouts, “Coming in left (or right),” enters the room and positions himself where he can control the actions of his teams.

a. He does not block the entrance way.

b. He makes a quick assessment of the size and shape of the room and begins to clear through the room.

c. The assaulting fire team leader determines if the remaining man on his team is required to assist in clearing the room.

d. If the team leader decides to bring the last man in, he shouts, “Next man in left (or right),” the last man in the fire team shouts, “Coming in left (or right),” enters the room, and begins clearing through the next room.

e. If the team leader decides not to bring the last man in, he shouts, “Next man, stand fast.” The last man remains outside the building and provides security from there. The team leader then directs the soldier on the right side of the entrance to begin clearing. The team leader reports to the squad leader, and then resumes the duties of the soldier on the right of the entrance to provide support.

13. Once the room is cleared, the team leader of the assaulting fire team signals to the squad leader that the building has been entered and the foothold gained.

14. The squad leader enters the building and marks the entry point with a Phoenix Beacon. The squad leader determines whether or not his squad can continue to clear through the building and maintain fire superiority outside with the base of fire team.

a. The squad leader reports to the platoon leader that the squad has entered the building and seized a foothold.

b. The squad leader determines which room to clear next and illuminates the entry point with his hand-held laser pointer. He then designates the lead fire team.

c. The squad leader and the lead fire team move to the entrance of the next room to be cleared. They position themselves at either side of the entrance.

d. The squad leader directs the team to continue and clear the next room. The lead fire team performs the same actions in steps 10 through 12 to clear the next room.

15. The squad leader rotates fire teams as necessary to keep soldiers fresh and continue the momentum of the attack.

16. The squad leader follows the fire team that is clearing to ensure that the cleared rooms are properly marked (ir chemlight disks).

17. Once the room is cleared, the team leader of the assaulting fire team signals to the squad leader that the building has been entered and the foothold gained.

18. The squad leader reports to the platoon leader that the squad has entered the building and gained a foothold. He ensures that the entry point to the building is marked with a Phoenix Beacon. The platoon follows the success of the seizure of the foothold as part of the Platoon Drill, Enter and Clearing a Building.

19. The squad reorganizes as necessary. Leaders redistribute ammunition.

BATTLE DRILL 6
ENTER AND CLEAR A BUILDING

TASK. Enter and Clear a Building (Platoon) (7-3-D108).

CONDITION. While operating as part of a larger force, the platoon is moving when it receives fire from the enemy in the building.

STANDARD.

1. The platoon kills, captures, or forces the withdrawal of all enemy in the building.
2. The platoon prevents noncombatant casualties and collateral damage (ROE dependent).
3. The platoon maintains a sufficient fighting force to defeat the enemy's counterattack, and continue the mission.

PERFORMANCE MEASURES.

1. The squad in contact reacts to contact.

2. The platoon gains suppressive fires.

a. The squad in contact establishes a base of fire position. The squad establishes local security and throws ir ground flares or ir chemlight bundles, to mark its flanks, while maintaining suppressive fires against the enemy. The squad leader uses his hand-held laser pointer to designate the enemy location in the building. The platoon leader, his RTO, platoon FO, and the squad leader of the next squad move forward to link up with the squad leader of the squad in contact.

b. The platoon sergeant repositions the remaining squads, if necessary, to provide additional observation and supporting fires.

3. The platoon leader determines the maneuver by identifying:
   a. The building and any obstacles through his AN/PVS-7B.
   b. The size of the enemy force engaging the platoon. (The number of automatic weapons, the presence of vehicles, and the employment of indirect fires are indicators of enemy strength.)
   c. An entry point (assaulting squads should enter the building at the highest level possible).
   d. A covered and concealed route to the entry point.

4. The base of fire squad.
   a. Destroys or suppresses enemy crew-served weapons first then weapons that are firing effectively against the platoon. Squad leaders point out enemy crew-served positions with the laser pointer while team leaders use tracers and AN/PAQ-4 to paint targets for soldiers.
   b. Sustains suppressive fires at the lowest level possible.
   c. Uses M203 and hand-held ir smoke (MTETT) to create a screen to cover the assaulting squad's approach to the entry point.

5. The platoon leader uses his hand-held laser pointer to designate the entry point of the building. He also points out the left and right flanks of the base of fire squad which are marked by ir flares or chemlight bundles.

6. The platoon leader directs one squad to enter a building and secure a foothold. (See Battle Drill No. 6A, Enter a Building and Clear a Room.)

7. If necessary, the supporting squad repositions to isolate the building as well as continue suppressive fires. (Normally the platoon has added its supporting fires against the enemy.) The platoon leader orders the supporting squad to lift or shift fires (via FM or ir signaling flares).

8. The assaulting squad leader signals to the platoon leader (via FM or ir signaling flares) that his squad has secured the foothold. He calls forward his trail fire team to move into the building. He marks the entry point with a Phoenix Beacon.

9. The platoon leader moves into the building with the trail fire team of the squad that secured a foothold and directs the squad leader to clear the next room with the trail fire team.

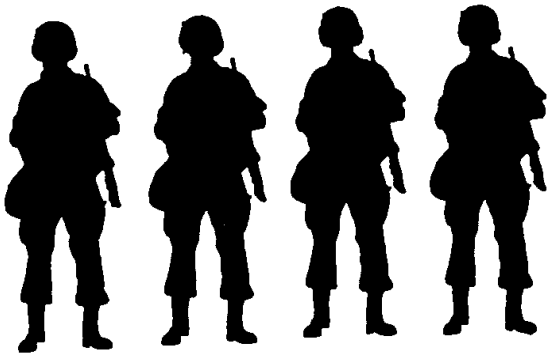
10. The platoon leader calls for the next squad to move into the building and begin clearing rooms systematically.

11. The platoon leader directs the actions of the squad clearing the building:
    a. Determines which room to clear and in what order.
    b. Redistribute ammunition as necessary.
    c. Ensures that clearing teams mark cleared rooms with ir chemlight disks over entrance. In addition, clearing teams mark the outside windows of rooms with chemlight bundles to allow support by fire elements outside to track progress of assaulting squads.
    d. Rotates squads as necessary to keep the soldiers fresh and to maintain the momentum of the action.

12. The supporting squad:
    a. Repositions as necessary to continue to isolate and suppress the building from the outside.
    b. Ensures that all friendly forces enter the building **ONLY** through the entry point. The squad leader uses his hand-held laser pointer to assist friendly forces.

13. The platoon sergeant calls forward ammunition resupply and organizes teams to move it forward into the building.

14. The platoon leader reports to the company commander that his platoon has cleared the building or that he is no longer able to continue clearing.



BATTLE DRILL 7A
ENTER/CLEAR A TRENCH

TASK. Enter/Clear a Trench (Squad) (7-4-D111).

CONDITIONS. The squad is operating as part of a larger force. The squad is moving and receives fire from the enemy.

STANDARDS.

1. The squad secures a foothold in a trench.
2. The squad kills, captures, or forces the withdrawal of the enemy in its assigned section of the trench.
3. The squad maintains a sufficient force that can defeat the enemy's counterattack and continue operations.

PERFORMANCE MEASURES.

1. The squad reacts to contact (Battle Drill No. 2).

2. The fire team in contact locates the enemy position through AN/PVS-7B and suppresses it with the help of AN/PVS-4.

3. The squad leader determines if he can maneuver by identifying the following with his hand-held laser pointer:
   a. The enemy trench and any obstacles.
   b. Size of enemy force engaging the squad. (The number of automatic weapons, presence of vehicles, and employment of indirect fires are indicators of enemy strength.)
   c. An entry point.
   d. A covered and concealed route to the entry point.

4. The fire team in contact guides on the team leader's AN/PAQ-4 laser and tracers through their AN/PVS-7B and places well-aimed fires against the enemy position using their own AN/PAQ-4 or AN/PVS-4. The fire team accomplishes the following:
   a. Destroys or suppresses the enemy weapons that are effectively firing against the squad.
   b. Continues suppressive fires.

5. The squad leader directs the fire team in contact to support the other team's entry into the trench. He uses his hand-held laser pointer to designate the following:

a. The left and right firing limits of the supporting team.

b. Entry point to the trench by the assault team.

c. Route of the assault team.

d. Locations of the enemy key weapons and high payoff targets.

6. The squad leader illuminates the entry point of the trench line using his hand-held laser pointer (MTETT).

7. The squad leader and the assault fire team move to the last covered and concealed position short of the entry point.

a. The squad leader signals (visual signal, or ir signaling flare) for the supporting team to shift supporting fires away from the entry point.

b. The base of fires team shifts suppressive fires away from the assaulting team and continues to suppress adjacent enemy positions to isolate the trench as required. The fire team leader signals that fires have been shifted with an ir signaling flare or visual signal. The supporting fire team leader helps the assaulting team SEE by silhouetting the enemy positions with ir flares (MTETT). If required, the squad leader requests ir 60mm illumination through the platoon leader.

c. The assault team leader and automatic rifleman remain in a position short of the trench to add well-aimed, accurate suppressive fires for the initial entry.

d. The squad leader takes the two remaining soldiers of the assault fire team and continues toward the entry point. They move by rushes or crawling.

e. The squad leader positions himself where he can best control his teams.

8. The first two soldiers of the assault team move to the edge of the trench, parallel to the trench on their backs. On the squad leader's command, they cook off grenades (two seconds maximum), then shout "Frag out," and throw the grenades into the trench. **NOTE:** ***All soldiers entering the trench must have AN/PVS-7B, AN/.PAQ-4, and ir flashlights attached to the underside of their weapons. When ir flashlights are not available, use the ir source on the NODs.***

a. Upon detonation of the grenades, the soldiers roll into the trench, landing on their feet, back to back. They fire their weapons down the trench in both directions.

b. Both soldiers immediately move in opposite directions down the trench, firing three round bursts. Each soldier continues until he reaches the first corner of the intersection. Both soldiers halt and take up positions to block any movement toward the entry point.

c. At the same time, the squad leader rolls into the trench, and secures the entry point. He then marks the entry point with a Phoenix Beacon, or in accordance with OPORD.

d. Upon detonation of the grenades, the assault fire team leader and the automatic rifleman move to the entry point and enter the trench. The squad leader directs them to relieve one of the soldiers securing the trench intersection. Upon being relieved, the soldier links up with his buddy at the other end of the trench line and continues to secure that intersection.

9. The squad leader remains at the entry point. He calls forward the supporting team, once he has ensured that the remainder of the platoon continues to provide supporting fires.

10. The squad leader reports to the platoon leader that he has entered the trench and secured a foothold. The platoon follows success of the seizure of the foothold with the remainder of the platoon as part of Battle Drill No. 7, Enter and Clear a Trench (Platoon).

BATTLE DRILL 7
ENTER/CLEAR A TRENCH

TASK. Enter/Clear a Trench (Platoon) (7-3-110).

CONDITION. The platoon is attacking as part of a larger force and identifies enemy in a trench line. The platoon deploys and establishes a base of fire. The platoon leader determines that he has sufficient combat power to maneuver and assault the trench line.

STANDARDS.

1. The platoon kills, captures, or forces the withdrawal of the enemy in its assigned section of the trench.
2. The platoon's main body is not surprised by the enemy counterattack.
3. The platoon maintains a sufficient fighting force to defeat the enemy's counterattack and continue operations.

PERFORMANCE MEASURES.

1. The platoon leader directs one squad to enter the trench and secure a foothold.

2. The platoon leader designates the entry point of the trench line using his hand-held laser pointer and controls the direction of movement once the platoon begins clearing.

3. The platoon sergeant positions soldiers and machine guns to suppress the trench and isolate the entry point. The platoon sergeant and weapons squad leader control the machine guns by hand-held laser pointers. The platoon sergeant and weapons squad leader monitor the lead element of the assaulting squad which is marked with a Phoenix Beacon carried by the Alpha Team Leader.

4. The assaulting squad executes actions to enter the trench and establish a foothold. (See Battle Drill No. 7A, Enter a Trench Line (Squad).) The assaulting squad leader signals to the platoon leader using his hand-held laser pointer that the foothold is secure, and the follow-on element can move into the trench.

5. The platoon leader directs one of the base of fire squads to move into the trench and begin clearing it in the direction of movement from the foothold.

6. The base of fire element repositions as necessary to continue suppressive fires.

7. The platoon leader moves into the trench with the assaulting squad.

8. The assaulting squad passes the squad that has secured the foothold and executes actions to take the lead and clear the trench. ***NOTE: The fire support element must be able to identify the location of the lead fire team in the trench line at all times. Lead team is marked with a Phoenix Beacon mounted on a stick or sturdy radio antenna. When two teams are clearing, the Phoenix Beacon will be programmed to distinguish between squads.***

a. The squad leader designates the lead and trail fire teams.

b. The lead fire team and squad leader move to the forward most secure corner of the intersection. The squad leader tells the team securing that corner or intersection that his squad is ready to continue clearing the trench. The lead team takes the Phoenix Beacon from the squad securing the intersection. The trail team follows, maintaining visual contact with the last soldier of the lead fire team.

c. The lead fire team passes the element securing the foothold.

(1) The lead soldier of the fire team moves abreast of the soldier securing the corner of the intersection, taps him and announces, “TAKING THE LEAD.”

(2) The soldier securing the corner or the intersection acknowledges that he is handing over the lead by shouting, “OKAY.” He allows the fire team to pass him.

d. The lead fire team starts clearing in the direction of movement. They arrive at a corner or intersection.

(1) Allowing for cook-off (two seconds maximum) and shouting “FRAG OUT,” the soldier prepares and throws the grenade around the corner.

(2) Upon detonation of the grenade, the lead soldier moves around the corner firing three round bursts and advancing as he fires. The entire fire team follows him to the next corner or intersection.

e. The squad leader:

(1) Follows immediately behind the lead team.

(2) Ensures that the trailing fire team moves up and is ready to pass the lead at his direction.

(3) Rotates fire teams as necessary to keep his soldiers fresh and to maintain the momentum of the attack.

(4) Requests indirect fires, if necessary, through the platoon leader. Uses his laser pointer to direct M203 fires against enemy positions along the trench line**WARNING:** ***The fire teams must maintain sufficient interval to prevent them from being engaged by the same enemy fires.***

f. At each corner or intersection, the lead fire team performs the same actions as described above (paragraph 8d).

g. If the lead soldier finds that he is nearly out of ammunition before reaching a corner or intersection, he announces "AMMO."

(1) Immediately, the lead soldier stops and moves against one side of the trench, ready to let the rest of the team pass. He continues to aim his weapon and ir flashlight down the trench in the direction of movement.

(2) The next soldier ensures that he has a full magazine, moves up abreast of the lead soldier, taps him and announces, "TAKING THE LEAD."

(3) The lead soldier acknowledges that he is handing over the lead by shouting "OKAY." Positions rotate, and the squad continues forward.

h. The trailing fire team secures the intersections and marks the route within the trench with ir chemlights as the squad moves forward. The trailing fire team ensures that follow-on squads relieve his buddy teams to maintain security.

i. The squad leader reports the progress of the clearing operation. (The base of fire element must be able to identify the location of the lead fire team in the trench at all times.)

9. The platoon leader rotates squads to keep soldiers fresh and to maintain the momentum of the assault.

10. The platoon sergeant calls forward ammunition resupply and organizes teams to move it forward into the trench.

11. The base of fire element ensures that all friendly forces move into the trench ONLY through the designated entry point. (All movement must be made in the trench to avoid casualties by friendly fires.)

12. The platoon leader reports to the company commander that the trench line is secured, or that he is no longer able to continue clearing✪

BATTLE DRILL 8
CONDUCT INITIAL BREACH OF A MINED WIRE OBSTACLE

TASK. Conduct Initial Breach of a Mined Obstacle (Platoon) (7-3-D112).

CONDITIONS. The platoon is operating as part of a larger force. The platoon's forward movement is stopped by a wire obstacle reinforced with mines, at night, that cannot be bypassed. The enemy begins to engage the platoon from positions on the far side of the obstacle.

STANDARDS.

1. The platoon makes a breach in the wire obstacle and moves all effective personnel and equipment through the breach within 45 minutes of entering the obstacle.
2. The platoon moves the support element and follow-on forces through the breach.
3. The platoon maintains a sufficient fighting force to secure the far side of the breach.

PERFORMANCE MEASURES.

1. The squad in contact reacts to contact.

2. The platoon leader, his RTO, the platoon FO, and one machine gun team move forward to link up with the squad leader of the squad in contact.

3. The platoon leader determines that he can maneuver by identifying the following through his AN/PVS-7B:

a. The obstacle and enemy positions through the assistance of the laser beam of the squad leader of the squad in contact.

b. The size of the enemy force engaging the squad (for example, the number of enemy automatic weapons, the presence of enemy vehicles, and the employment of indirect fires are indicators of enemy strength).

c. A breach point. The platoon leader conducts a brief terrain analysis.

d. A covered and concealed route to the breach point.

4. The platoon leader directs one squad to support the movement of another squad to the breach point. He indicates the base of fire position, the route to it, the enemy position suppressed, the breach point, and the route the rest of the platoon will take to it. He also gives instructions for lifting and shifting fires.

5. The platoon leader designates one squad as the breach squad and the remaining squad as the assault squad once the breach has been made. (The assault squad may add its fires to the base of fire squad. Normally, it follows the covered and concealed route of the breach squad and assaults through immediately after the breach is made.)

6. The designated squad moves to the breach point and establishes a base of fire. Like the previous battle drills, the squad leader designates targets and the left and right limits with his hand-held laser pointer. Team leaders control fires with AN/PAQ-4 while team members key in on the team leader's tracers with their AN/PAQ-4 to place accurate fires on the enemy positions.

7. The platoon sergeant moves forward to the base of fire squad with the second machine gun and assumes control of the squad. He uses his hand-held laser pointer to assign new sectors of fire.

8. On the platoon leader's signal, the base of fire squad:

a. Identifies the enemy's crew-served weapons by focusing on the enemy's rate of fire and muzzle flashes and destroys or suppresses enemy's weapons that are firing effectively against the platoon.

b. Obscures the enemy position with ir smoke (M203 or hand-held if MTETT allows). Employs ground illumination flares to mark the target area.

c. Continues suppressive fires at the lowest possible level.

9. The platoon leader designates the breach point with his hand-held laser pointer and leads the breach and assault squads along covered and concealed routes.

10. The platoon FO calls for and adjusts indirect fires as directed by the platoon leader.

11. The breach squad executes actions to breach the obstacle (footpath).

a. The squad leader directs one fire team to direct the movement of the other fire team to the breach point. The fire team leader in support SEEs through his AN/PVS-7B and picks up the targets designated by the base of fire squad leaders laser beam. He uses his AN/PAQ-4 to designate targets for his team. Additionally, team members SEE through their AN/PVS -7B to locate other enemy positions that can fire upon the breaching team.

b. The squad leader designates the breach point using his hand-held laser pointer.

c. The base of fire team continues to provide suppressive fires and to isolate the breach point.

d. The breaching fire team, with the squad leader, moves to the breach point using the covered and concealed route. The base of fire team identifies the breach team through AN/PVS-7B and shifts fires.

(1) The squad leader and breaching fire team leader employ ir smoke grenades to obscure the breach point (MTETT). The platoon base of fire squad also identifies the breach team and shifts direct fires away from the breach point and continues to suppress key enemy positions.

(2) The breaching fire team leader positions himself and the automatic rifle man on one flank of the breach point to provide close-in security.

(3) The grenadier and rifleman of the breaching fire team probe for mines and cut the wire obstacle, marking the four corners of the breach with four Phoenix Beacons as they proceed. (Bangalore is preferred, if available.)

(4) Once the obstacle has been breached, the breaching fire team leader marks the four corners of the entrance of the breach with four ir chemlights or Phoenix Beacons on tent stakes facing the friendly side and moves to the far side of the obstacle with the automatic rifleman and takes up covered and concealed positions with the rifleman and grenadier. They signal to the squad leader when they are ready to support.

e. The squad leader signals the base of fire team leader to move his fire team up and through the breach. He then moves through the obstacle and joins the breaching fire teams, leaving the grenadier and rifleman of the supporting fire team on the near side of the breach to guide the rest of the platoon through.

f. Using the same covered and concealed route as the breaching team, the base of fire team moves through the breach and takes up covered and concealed position on the far side.

12. The breach squad leader reports the situation to the platoon leader and posts guides at the breach point.

13. The platoon leader leads the assault squad through the breach in the obstacle and positions it on the far side to support the movement of the remainder of the platoon or to assault the enemy position covering the obstacle.

14. The platoon leader reports the situation to the company commander and directs his breaching squad to move up and through the obstacle. The platoon leader appoints guides to assist the company through the breach point.

15. The company follows up the success of the platoon as it conducts the breach and continues the assault against the enemy position.

Appendix A to Chapter 2
Summary of SOPs

Following are summaries of the SOPs used in the preceding battle drills. They may be modified as the situation dictates to address equipment availability and capabilities of the enemy.

Battle Drill	Task	Method	Equipment Required	Notes
COMMON TO ALL	SEE/acquire targets	Use AN/PVS-7B, AN/PVS-4	AN/PVS-7B AN/PVS-4 AN/PAQ-4 Ground Cdr's pointer ir Para Flar ir Ground Flare ir Smoke (M203, Mtr, HG)	
	Designate targets and control fires	Use AN/PAQ-4 and GCPs to designate tgts		
	Assign sectors of fire	Use AN/PAQ-4 and GCPs to designate sectors of fire		
	Aid in navigation	Use AN/PAQ-4 and GCPs to designate direction of movement		
	Illuminate enemy positions	Use ir parachute flares to illuminate.		
	Mark enemy target area.	Use ir ground flares to mark target area.		
	Element in contact marks its flanks.	Soldiers on flanks throw ir chemlight bundles or ir ground flares.		
	Screen to defeat enemy NODs	Deploy ir smoke (Mortar, 40mm, HG)		
BD 1: *Conduct Platoon Attack*	Identify base of fire position.	Soldiers on flanks throw ir chemlight bundles or ir ground flares.	ir Chemlights ir Smoke ir Flares	
	Screen assaulting element's movement	Deploy smoke (HC, ir)		
	Signal to lift or shift fires	ir flare or other signal		

Battle Drill	Task	Method	Equipment Required	Notes
BD 1A: *Conduct Squad Attack*	Identify base of fire position.	Soldiers on flanks throw ir chemlight bundles or ir ground flares.	ir Chemlights ir Smoke ir Flares	
	Screen assaulting element's movement	Deploy smoke (HC, ir)		
	Signal to lift or shift fires	ir flare or other signal		
BD 2: *React to Contact*	Same as COMMON			
BD 3: *Break Contact*	Same as COMMON			
BD 4: *React to Ambush*	Same as COMMON			
BD 5: *Knock Out Bunkers*	Illuminate bunker	ir flare to silhouette the bunker	ir Flares ir Flashlight ir Chemlights	
	Signal to lift or shift fires	ir flare or other signal		
	Search the Bunker	ir flashlight or ir source on NODs		
	Mark the bunker “cleared”	ir chemlight mounted on a stake or stick in top of bunker		
BD 5A: *Knock Out a Bunker*	Illuminate bunker	ir flare to silhouette the bunker	ir Flares ir Flashlight ir Chemlights	
	Signal to lift or shift fires	ir flare or other signal		
	Search the Bunker	ir flashlight or ir source on NODs		
	Mark the bunker "cleared"	ir chemlight mounted on a stake or stick in top of bunker		

Battle Drill	Task	Method	Equipment Required	Notes
BD 6: *Enter and Clear a Building*	Designate entry point to building	Leader designates with GCP	GCP ir smoke Phoenix Beacon ir Chemlight Disks ir Chemlights	
	Screen movement of assault force	ir smoke		
	Mark entry point	Phoenix Beacon		
	Mark cleared rooms	ir chemlight disk over entrance		
	Track progress of assault elements	ir Chemlight bundles hung outside windows		
BD 6A: *Enter a Building and Clear a Room*	Designate entry point to building	Leader designates with GCP	GCP ir smoke Phoenix Beacon ir Chemlight Disks ir Chemlights	
	Screen movement of assault force	ir smoke		
	Mark entry point	Phoenix Beacon		
	Mark cleared rooms	ir chemlight disk over entrance		
BD 7, 7A: *Enter/Clear a Trench*	Designate entry point of trench	Illuminate with GCP	GCP ir Flares Phoenix Beacons ir Chemlights	
	Signal support element to shift or lift fires	ir flare		
	Illuminate trench during clearing	All soldiers in assault have ir flashlight taped to barrel of weapon		
	Mark entry point of trench	Phoenix Beacon		
	Track progress of assault elements	Phoenix Beacons mounted high on a stick - coded to distinguish between squads.		
	Mark route inside trench as it is cleared	Mark route/intersections with ir chemlights		

Battle Drill	Task	Method	Equipment Required	Notes
BD 8: *Conduct Initial Breach of a Mined Wire Obstacle*	Designate breach point	Leader uses GCP	GCP ir Chemlights Phoenix Beacons ir Smoke	
	Obscure breach site	ir and HC smoke		
	Mark breach lane	Phoenix Beacon (or ir chemlights) on all four corners.		

CHAPTER 3
CURRENT NIGHT-FIGHTING EQUIPMENT CAPABILITIES

1. **GENERAL.** This chapter provides a brief description of night vision equipment found currently at rifle squad and platoon levels in the 82d Airborne Division.

2. NIGHT VISION EQUIPMENT.

a. *AN/PVS-4.*

(1) ***Capabilities.*** The AN/PVS-4 is a portable, battery-operated electro-optical instrument used for observation and aimed fire of weapons at night utilizing the M16 rifle, M249 and M60 machineguns, M72A1 rocket launcher, and M203 grenade launcher. It amplifies reflected light, such as moonlight, starlight, and skyglow, so that the viewed scene becomes clearly visible to the operator. The sight does not emit visible or ir light that can be detected by the enemy. The rubber-cup eyepiece prevents any amplified light from illuminating the operator.

(2) ***Characteristics.***
(a) **Weight:** 3.9 lbs
(b) **Range:** Starlight-400m/Moonlight-600m
(c) **Magnification:** 3.8X
(d) **FOV:** 15 degrees

(3) ***Limitations.*** The sight does not emit any visible or ir light, and uses ambient light. It is difficult to use during movement for constant scanning, and is primarily used for target acquisition. It is bulky, makes a weapon extremely top-heavy when mounted, and easily gets caught on vines, grass, and branches. The sight has a tendency to cause "white-out" to the vision of the firing soldier when used with the M60 machinegun or the M249 Squad Automatic Weapon.

(4) ***Considerations.*** The sight can be mounted on virtually all infantry small arms. Its variable magnification and focus make it useful for long-range scanning. It can lose its zero if jarred. The vision of the operator is obscured from the muzzle flash after rounds are fired.

b. ***AN/PVS-5.***

(1) ***Capabilities.*** The AN/PVS-5 is a battery-operated night vision system that allows the soldier to perform various tasks during low-light conditions. It can be handcarried or headstrap-mounted to make it possible to read, do manual tasks, or conduct surveillance during limited visibility. The ir setting on the control knob controls an ir beam that can be used for observation in zero illumination or for signalling.

(2) ***Characteristics.***
(a) **Weight:** 1.9 lbs
(b) **Range:**
1 Man size: Starlight-150m/Moonlight-165m
2 Vehicle size: Starlight-300m/Moonlight-330m
(c) **Magnification:** None
(d) **FOV:** 40 degrees

(3) ***Limitations.*** Rain, fog, sleet, snow, or smoke degrade the operation of the goggles. The goggles are less effective when viewing into shadows and other darkened areas. They also require some night light (starlight, moonlight, etc.) to operate. Operation during low-light levels will produce a noisy or grainy picture. The solid plastic face piece prevents any peripheral vision when worn with the head harness. The AN/PVS-5 is not found in Active Component rifle companies.

(4) ***Considerations.*** The AN/PVS-5 is not as effective as the PVS-7 and has been replaced in most infantry units. Its greatest advantage is that the dual eyepieces allow it to be used with binoculars for long-range scanning.

c. ***AN/PVS-7A.***

(1) ***Capabilities.*** The AN/PVS-7A is a self-contained night vision system worn on the head or hand-held. It provides improved night-vision capabilities using available light from the night sky. The goggle enables the user to perform normal tasks such as reading, walking, driving on the ground, or surveillance during times of darkness. The goggle may be used with or without the standard battle helmet, and provides capabilities for all infantry tasks. The head harness provides a snap-on, snap-off capability for the monocular goggle that leaves the head harness in place. In the case of extreme darkness, as in a covered area, the goggle has an ir feature (ir illuminator) that allows viewing up to two meters. A built-in indicator lets the operator know when the ir illuminator is in use.

(2) ***Characteristics.***
(a) **Weight:** 1.5 lbs.
(b) **Battery power:** BA-5567 or "AA"
(c) **Range:** Starlight-75m/Moonlight-100m
(d) **Magnification:** 1X
(e) **FOV:** 40 degrees

(3) ***Limitations.*** The ir projector provides light for only a very short distance, and the device requires some ambient light to be effective. The head harness is fragile and needs to be padded for jumping, even in the soft case. Additionally, head harness adjustment must be included in pre-combat inspections.

(4) ***Considerations.*** The goggle is effective in cloudy starlight to bright moonlight. It can be removed quickly from the facemask with automatic shutoff. It can be detached from the facemask and used as a hand-held viewer. When the ir feature is in use, it is detectable by other night-vision devices.

d. ***AN/PVS-7B.***

(1) ***Capabilities.*** The AN/PVS-7B is a hand-held, head-mounted, or helmet-mounted night-vision system that enables walking, driving, weapon firing, short-range surveillance, map reading, vehicle maintenance, and administering first aid in both moonlight and starlight. It has an ir projector that provides illumination at close ranges, and that can be used for signalling. There is a high-light level shutoff if the device is exposed to damaging levels of bright light. There is a compass that attaches to the device that allows for reading an azimuth through the goggles. The helmet-mount is very comfortable since the mount is not resting on the soldier's head.

(2) ***Characteristics.***
(a) **Weight:** 1.5 lbs
(b) **Battery power:** BA-5567 or 2 X "AA"
(c) **Range:** Starlight-150m/Moonlight-300m
(d) **Magnification:** 1X
(e) **FOV:** 40 degrees

(3) ***Limitations.*** The device is made of lightweight plastic that can be easily broken if dropped or hit against another object during airborne operations or IMT. The head harness is bulkier than the harness of the PVS-5 or 7A, and is more fragile. The helmet mount also breaks relatively easily and should be taped or padded in the "up" position when not in use.

(4) ***Considerations.*** The ir projector can be adjusted for a wide or narrow beam. The device uses two different types of batteries, including "AAs" and the BA-5567. The helmet mount flips up easily and allows for the goggles to be quickly moved on and off the face. There is a low battery signal light inside the eyepiece. When mounted on the helmet, the device makes the front of the helmet heavier, (much like a MILES harness weights down the back of the helmet). Neither the helmet harness nor the compass are Basic Issue Items, but can be ordered through the supply system.

e. *AN/TAS-5 DRAGON NIGHT SIGHT.*

(1) ***Capabilities.*** The AN/TAS-5 is used as a night vision sight on the M47 Dragon. The night tracker senses heat from the target, and changes it into a picture that is displayed in the sight reticle. The tracker automatically guides the missile along the gunner's LOS by flight direction commands generated in the tracker which are transmitted to the missile through a guidance wire until the missile impacts. The device can see through smoke, zero illumination, and light foliage at distances over 1,000 meters.

(2) ***Characteristics.***
(a) **Weight:** 22 lbs
(b) **Range:** 1,200m

(3) ***Limitations.*** The device is very heavy and awkward. It requires a separate rucksack to transport it on the battlefield. It is fragile and needs to be handled carefully, and is not conducive to airborne operations. When in operation, it gives off a humming and clicking noise that can be heard a short distance away.

(4) ***Considerations.*** Viewer penetrates all conditions of limited visibility and light foliage. The viewer takes up the whole rucksack upon deployment to the field; leaders need to ensure a good cross-load plan of equipment, batteries and coolant bottles. A mount, a dragon missile, tripod, or some type of expedient method must be used for sustained observation, as the device is too heavy to be held by hand for more than a few minutes.

f. *AN/PAS-7A THERMAL VIEWER.*

(1) ***Capabilities.*** The Viewer Infrared AN/PAS-7A provides a means of night-time observation by using only the ir radiation emitted by the object observed. The hand-held viewer is used for observation and target selection.

(2) ***Characteristics.***
(a) **Weight:** 10.8 lbs
(b) **Range:** 1,000m
(c) **Magnification:** 2.5X

(3) ***Considerations.*** The viewer penetrates all conditions of limited visibility and light foliage. The viewer is extremely bulky; leaders need to ensure a good cross-load plan for equipment and batteries.

g. *AN/PAQ-4A INFRARED AIMING LIGHT.*

(1) ***Capabilities.*** The aiming light increases the accuracy of your fire at night. After it is properly installed and zeroed on your weapon, and turned ON, the aiming light sends out an invisible pulsating light beam along the line of sight out to 150 meters minimum against a man-sized target. The light beam can be seen with night vision goggles (NVG) such as the AN/PVS-5 or AN/PVS-7. While wearing your NVG, place the projected spot of light on the target and fire. The fired round should impact in the center of the spot of light on the target. The AN/PAQ-4A allows for target designation and serves as a leader's pointer. It has a grip-activating device that allows it to be turned on and off with the firer's hand never moving from the proper firing position.

(2) ***Characteristics.***
(a) Easily mounted to the M16A2 and M60 machinegun.
(b) **Lightweight:** 198g (with battery).
(c) Easy to maintain.
(d) Can use in extreme cold.

(3) ***Limitations.*** The light can only be seen by those with NVG. It is only necessary to activate the aiming light a few seconds prior to firing. This reduces possibility of detection by the enemy. The beam does not penetrate smoke, foliage, or anything that a visible beam of light would not.

(4) ***Considerations.*** The aiming light does not interfere with the normal firing of the weapon, and when properly zeroed, provides quick-point ability that increases accuracy. Anyone with NVG can see the beam, so it is excellent for use as a pointer, designating fields of fire, or any other leader tasks where target designation is needed. An accurate zero can be obtained without firing any confirmation rounds using the ARI Dry Fire Zero.

h. *AN/PAQ-4B and 4C INFRARED AIMING LIGHTS.*

(1) ***Capabilities.*** The AN/PAQ-4B and 4C have similar characteristics to the AN/PAQ-4A. The aiming light is used in conjunction with NVG to direct weapon firing at night. The AN/PAQ-4B projects a pulsating ir beam along the weapon's line of fire designating the point of impact on the target. The AN/PAQ-4C projects a steady beam.

(2) ***Characteristics.***

(a) **Range:** Beyond 600 meters. Range depends on light levels and night vision devices used for observation.

(b) Beam only visible with NVG.

(c) Mounts to M16, M203, M4, M2, M60, and M249 weapon systems.

(d) Cable switch capability for remote activation by the operator (operator does not have to move his hand to activate the aiming light).

(e) **Weight:** 164 grams.

(3) ***Considerations.*** Like the AN/PAQ-4A, these aiming lights do not interfere with the normal firing of the weapon, and when properly zeroed, provide quick-point ability that increases accuracy.

i. *AN/UAS-12 TOW NIGHT SIGHT.*

(1) ***Capabilities.*** The night sight enables the TOW operator to track targets in limited visibility. It runs off of a night-sight battery power conditioner or vehicle power. The Narrow Field of View or Wide Field of View may be selected depending on the target distance.

(2) ***Characteristics.***
(a) **Weight:** 21 lbs
(b) **Range:** 3,750 meters
(c) **Magnification:** WFOV- 4X/NFOV- 12X
(d) **FOV:**
1 WFOV- 2.2 degrees or 144 meters at 3,750 meters
2 NFOV- 6.6 degrees or 431 meters at 3,750 meters

(3) ***Limitations.*** The night sight is very heavy; thus, it is usually transported in a vehicle (it is utilized by a TOW gunner). When in operation, the night sight makes a distinctive clicking sound and may be heard from a great distance. It is difficult to identify friend or foe with thermal sight at long range.

(4) ***Considerations.*** A closed cooler provides cooling of the night sight infrared detectors. The night sight adjusts to align with the day sight tracker. The thermal capability allows it to penetrate all conditions of limited visibility and light foliage.

j. *Ground Commander's Pointer, GCP-1A.*

(1) ***Capabilities.*** See Appendix A to Chapter 3. The GCP 1A is an ir pointer and illuminator. The ir light is invisible to the naked eye, but fully visible to NVG and other night vision devices. It is designed to provide clandestine target designation and illumination for night vision equipment users. The GCP ir light may be adjusted from a pencil beam, capable of pointing targets out to ranges of 5,000 meters. It may also be set on floodlight beam to illuminate targets at various ranges. The GCP is also eye safe.

(2) ***Characteristics.***
(a) Can be mounted on weapons and zeroed.
(b) **Weight:** 128 grams.

(3) ***Considerations.*** The beam can be hand adjusted to the floodlight mode to illuminate large targets or select a more narrow spotlight beam to illuminate a face or torso for assault weapon aiming and firing. The leader can designate targets at a great length allowing weapon systems not organic to his unit to engage at a stand-off distance.

k. ***Phoenix Beacon.***

(1) ***Capabilities.*** See Appendix B to Chapter 3. The Phoenix Beacon is the first pocket-sized programmable infrared (ir) beacon designed for individual combat identification (CID). It is invisible to the naked eye, but with night vision systems can be seen from 20 miles. It is perfect for clandestine marking and identification of individuals, airdrop bundles, vehicles, routes, and landing zones. The primary advantage of the Pheonix Beacon is the instant field encoding capability. Users can easily enter and change the flashing pattern emitted by the beacon. Any metallic object can be used to enter a unique code.

(2) ***Characteristics.***

(a) **Battery type:** 9 volt/BA-3090 or equivalent

(b) **Battery life:** 5 to 320 hours (varies with code length)

(c) **Size:** 1" X .75" X 2.5" (including BA-3090 battery)

(d) **Weight:** 2 ounces (including BA-3090 battery)

(3) ***Considerations.***

(a) The Phoenix Beacon can be used during all combat situations. In company-size operations, use several to identify the front edge of friendly lines for close air support (CAS), use it to identify friendlies and prevent fratricide, use it to conduct linkups, or any other operation. The Phoenix Beacon is affordable, nearly indestructible, can be field-programmed without special equipment, is small, light-weight, rugged, and waterproof.

(b) The Phoenix Beacon is an economical item and can be purchased by small units without inflating their budgets. The following information is provided for the purchase of the Phoenix Beacon:

1 **Model:** T-1604/U

2 **Unit price:** $59.00

3 **Business:** Night Vision Equipment Company, Inc.
P.O. Box 266
Emmaus, PA 18049-0266
POC: Gene Adcock
Phone: (610) 391-9101

Appendix A to Chapter 3

**Night Vision Equipment Company (NVEC), Inc. Post Office Box 266,
Emmaus, PA 18049-0266
Phone (610)391-9101/FAX (610)391-9220**

GROUND COMMANDER'S POINTER-INFRARED
Model Number(s) GCP-1A, GCP-1B

SYSTEM DESCRIPTION AND FEATURES: NVEC's Ground Commander's Pointer is an infrared (IR) pointer and illuminator. The IR light is invisible to the naked eye, but is fully visible to night vision devices sensitive to 830 namoters (NM). It is designed to provide clandestine target marking and illumination for combat operations. The WARRIOR DOT^tm (5mR beam) can be used to mark targerts out to several thousand meters. The beam may be adjusted by the user from .5mR to as wide as thirty degrees; faces or man-size targets can be illuminated at more than one-thousand meters. In the floodlight mode, 20 to 30 degrees, vehicle-size targets can be illuminated at several hundred meters.

Ground forces use the WARRIOR DOT^tm with night vision devices to mark targets for close air support (CAS) missions, to mark objectives for coordinated ground attack, or widen the beam to illuminate dark areas for night photography and to look for bad guys hidden in the shadows.

Aviators use the Pointer to identify and coordinate targets, to illuminate the tail numbers of target aircraft, or to illuminate a helicopter landing zone for an unannounced landing.

MODEL NUMBER:	**CGP-1A**	**GCP-1B**
Wavelength:	830 nanometers	830 nanometers
Power Output in Milliwatts (mW)	50	100
Range in Meters:		
0.5 mR (Dot) Beam	8,000	10,000
2-Degree Beam	1,500	3,000
10-Degree Beam	800	1,600
Beam Modulation:	Continuous Wave (CW)	Continuous Wave (CW)
Beam Shape:	Rectangular (1X Tall X 4X Wide)	Rectangular (1X Tall X 4X Wide)
FDA Laser Classification	IIIb	IIIb
Eye Safety Features:	Power Switch Safety Cover, Lens Cover, Eye-Safe Laser Training Filter	Power Switch Safety Cover, Lens Cover, Eye-Safe Laser Training Filter
Power Source(s):	2/AA-Size Batteries	2/AA-Size Batteries
Weight in Grams (Ounces):	128 (4.5)	128 (4.5)

Kit includes: Ground Commander's Pointer with lens cover, Neutral Density Eye-Safe Laser Training Filter in Red Rubber Boot, 2/AA-Size batteries, Operator's Manual, and Soft Carrying Case.

Remarks/Options/Accessories: The Ground Commander's Pointer meets the requirements of CFR 1040a(2) and 1010.5 DoD exemption number E177-101DoD, 26 June 1976 to FDA laser safety requirements applies. Contracting officers are required to cite the exemption in contracts for this product. An optional 30 cm (12") Remote Control Power Switch, RCS-12 may be used to remotely trigger the laser.

Export regulated by State Department, ITAR, Title 22, CFR 120-130

Appendix B to Chapter 3

**Night Vision Equipment Company (NVEC), Inc. Post Office Box 266,
Emmaus, PA 18049-0266
Phone (610)391-9101/FAX (610)391-9220**

PHOENIX, TRANSMITTER, IR T - 1604/U*
Model Number(s) IR-15* (*5855-01-396-8732)

SYSTEM DESCRIPTION AND FEATURES: The *Phoenix* is the first pocket-size user-programmable infrared (IR) beacon designed for individual combat identification (CID). It is invisible to the naked eye, but with night vision systems has been seen from as far away as 20 miles. It is perfect for the clandestine marking and positive identification of individuals, airdrop bundles, vehicles, routes, and landing zones. In company-size operations, use several to identify the forward line of troops (FLOT) for night close air support (night CAS) strikes. In fast-moving combat operations, use it to identify friendlies and avoid fratricide. SpecOps teams use *Phoenix* to facilitate night rendezvous. The primary advantage of *Phoenix* is its instant no-tool field encoding capability. It allows any user to easily enter and change the flashing code. Any metallic object can be used to enter a code.

* Small
* Affordable
* Clandestine
* Lightweight
* Easy to use
* User-encodable
* Nearly indestructible
* No-tools field encoding
* Twenty-mile (32 km) tested range
* Waterproof - operates under water
* Visible IR-15V. Available as classroom trainer or for unaided night operations

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SYSTEM PERFORMANCE - TYPICAL

MODEL NUMBER	**IR-15**	**IR-15V**
Wavelength	**880**	**550-700**
Intensity (mCd):	**750**	**750**
Memory in Seconds :	**Four**	**Four**
Battery Type:	**9 Volt/BA-3090/U or Equivalent**	**9 Volt/BA-3090 U or Equivalent**
Battery Life in Hours*:	**5 to 320**	**5 to 320**
Diode Life in Hours:	**20,000**	**20,000**
Size in Inches (mm):**	**1 X 0.75 X 2.5 (25X20X27)**	**1 X 0.75 X 2.5 (25X20X27)**
Weight in Ounces (grams):**	**2 (57)**	**2 (57)**

* Varies with code length.
**Includes 9-Volt battery.

Remarks/Options/Accessories: The IR-15V, T-1605/U, NSN 6025-01-396-8732 Visible Tainer is available as a classroom training aid or for unaided night operations. The visible IR-15V has much shorter NVS acquisition range than the IR-15.

OPERATING INSTRUCTIONS: Connect a 9-Volt (BA-3090) battery. With a coin, make connection across the two pins on top of the *Phoenix*. Enter any series of dots and dashes into the four-second memory. A built-in microminiature red lamp flashes the sequences as you enter it. At the end of four seconds, a built-in microminiature green lamp will flash signalling the memory is full. *Phoenix* is now emitting your code. To eyeball test, short the pins. The built-in microminiature green lamp will flash your code, verifying operation. To turn OFF and delete the code, disconnect the battery.

Export regulated by State Department, ITARM, Title 22, CFR 120-130

Appendix C to Chapter 3
Squad and Platoon Night Vision Task Organization

1. MTOE 07035LFC82 FC7595, effective 16 November 1994, authorizes the following night fighting equipment for infantry rifle companies:

a. **69 AN/PVS-7B Night Vision Goggles**
b. **33 AN/PVS-4 Night Vision Sight**
c. **33 AN/PAQ-4 Aiming Light**
d. **6 AN/TAS-5 Dragon Night Sight**
e. **3 AN/PAS-7 Thermal Viewer**

2. According to the MTOE, this equipment is allocated as follows:

Rifle Squad	6 x PVS-7B	3 x PAQ-4	3 x PVS-4
Squad Leader	**X**	**X**	
A Team Leader	**X**	**X**	
SAW			**X**
M203	**X**		
M16-A2	**X**		
B Team Leader	**X**	**X**	
SAW			**X**
M203			**X**
M16-A2	**X**		

Weapons Squad	2 x PVS-7B	1 x PAQ-4	2 x TAS-5	2 x PVS-4
Weapons Squad Ldr	X	X		
Machine Gunner				X
Assistant Gunner	X			
Ammo Bearer				
Dragon Gunner			X	
Machine Gunner				X
Assistant Gunner				
Ammo Bearer				
Dragon Gunner			X	

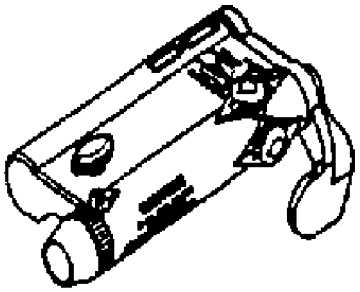
Platoon Headquarters	1 x PVS-7B	1 x PAQ-4	1 x PAS-7
Platoon Leader	X	X	X

Company Mortar Section	4 x PVS-7B
Section Leader	X
Squad Leader	X
Gunner	X
Gunner	X
Ammo Bearer	
Ammo Bearer	

3. Reconciliation of ***Company Night Vision Equipment:***

	PVS-7B	PVS-4	PAQ-4	TAS-5	PAS-7
Rifle Squads	**54**	**27**	**27**		
Weapons Squads	**6**	**6**	**3**	**6**	
Platoon Headquarters	**3**		**3**		**3**
Mortar Section	**4**				
Company Headquarters	**2**				
Total	**69**	**33**	**33**	**6**	**3**

4. **Task organization considerations.** Company commanders and platoon leaders may adjust the task organization of the night vision devices to suit the situation. Depending on the mission, terrain, or troops available, the leader can move his night vision devices wherever he feels they will provide him an advantage. Some suggestions that can be incorporated are: assign riflemen the PVS-4s for pin-point accuracy and assign the SAW gunners the PVS-7s thereby reducing white-out and allowing them to adjust fires on the target; place additional night vision devices in the support-by-fire positions; give the assault elements additional night vision devices, and give the company main effort additional equipment from the supporting efforts, etc. The matrixes above are standard allocations, but they can be adjusted by the leaders.✪



Appendix D to Chapter 3
AN/PAQ-4 Zeroing Techniques

1. **OVERVIEW.** This appendix is designed to improve zeroing for the AN/PAQ-4 (A or C models). For a more complete handling of this subject, contact the 82d Airborne Division

2. AN INTRODUCTION TO INFRARED AIMING LIGHTS (IAL).

a. Lasers (light amplification by simulated emission of radiation) are used extensively by the U.S. Armed Forces due to their ability to allow the user to remain undetected by the naked (unaided) eye. Infrared lasers are used as aiming and pointing devices.

b. The AN/PAQ-4 series of IALs are battery-powered, light-emitting diode transmitters which project a narrow beam of infrared light visible only when seen with image intensification viewers, such as NVG (e.g., AN/PVS-7 series NVGs). The projected light beam allows the user to determine exact aiming points as well as assign directions of fire or movement and designate targets for others equipped with NVGs. The aiming light increases the accuracy of direct firing at night. After being properly mounted and zeroed to the weapon, and turned ON, the aiming light sends out the invisible light beam along the line of sight which allows the user to engage targets successfully.

3. AN/PAQ-4A AIMING LIGHT.

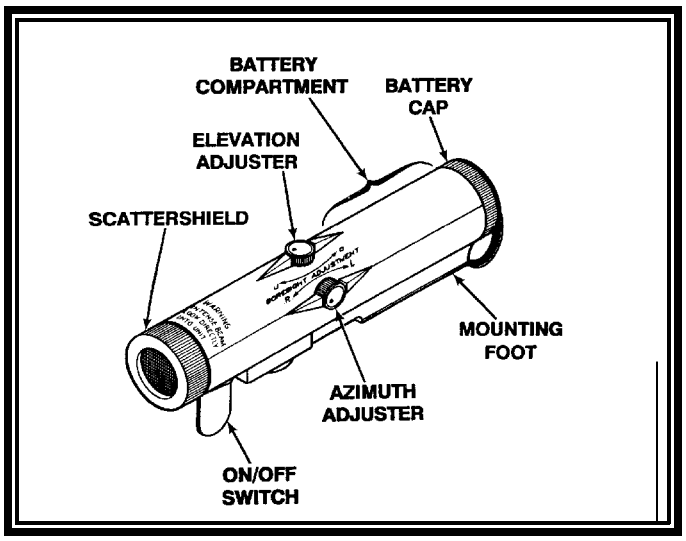


Figure 1

a. ***Characteristics.***

(1) ***Weight*****:** 0.9 lbs.

(2) ***Range*****:** 150 meters

(3) ***Power*****:** 2 AA batteries (BA-3058) or 1 Lithium Battery (BA-5567v/1567v)

b. ***Components.***

(1) Aiming Light Assembly

(2) Mounting Bracket (or foot) for the M16A2

(3) ON/OFF switch (OFF/ON/Momentary ON)

(4) Boresight adjusters (azimuth and elevation): one for moving beam up/down and the other for moving the beam left/right.

(5) Scattershield: mounts to front of aiming light that confines the light in a narrow beam, reducing off-axis radiation.

(6) Alignment Mandrel: used when boresighting

(7) Operator's Manual: TM 11-5855-297-12&P

c. ***Employment Considerations.*** The aiming light is highly accurate fo**r short ranges (out to approximately 100m)** when zeroed properly, using the ARI dry or live-fire zeroing techniques. The zeroing procedure in the technical manual (TM) does not work very well and leaves you with one aiming light not zeroed.***Remember, the aiming light can be seen by anyone equipped with NVG, friendly or enemy.***

4. MOUNT AND OPERATE THE AN/PAQ-4A.

a. The AN/PAQ-4A can be mounted on the following weapons/weapon systems:
(1) M16A1/2 rifle (to include with M203 grenade launcher attached)
(2) M60 machine gun
(3) M4 carbine
(4) M249 squad automatic rifle

b. Mounting and operating procedures are covered in the Operator's Manual (TM 11-5855-297-12&P, Section III).

5. ZERO AN/PAQ-4A USING THE ARI DRY-FIRE PROCEDURES.

a. ***Procedures for Zeroing.*** These procedures make three critical assumptions. First that the firer has a good daytime zero with the iron sights. Second, the initial aiming light adjustments have been made so that the firer's bullets are "on paper" at 25 meters at night. Third, the firer's NVG are adjusted for best visual acuity. All procedures can be implemented with materials readily available within a unit.

b. ***Daylight Zero of Rifles.*** Any rifle intended for night-time zeroing should also be properly zeroed for daytime firing. In the daylight, zero the M16A2 rifle for 300 meters using the standard 25-meter zeroing procedure (rear sight set to the 300 meter setting plus one click up toward 400 while zeroing). Use this setting for all-25 meter firing. Reference Task No. 071-311-2030 Zero an M16A2 rifle, STP 21-1-SMCT.

c. ***Zero of the AN/PAQ-4A for Night-Time Firing.*** This zeroing procedure involves aiming the iron sights of your daytime zeroed M16A2 rifle at the center of a specially marked zeroing target (placed eight M16A2 rifle lengths, 26 feet-4 inches, in front of the muzzle of the rifle) and then adjusting the AN/PAQ-4A aiming light beam to a designated spot that will result in a 100-meter aim light zero. The zero will make the aiming light spot parallel to the strike of the round at 100 meters. It is a nonfiring process so it can be done indoors or outdoors, from subdued light conditions to fully dark. All that is needed is about 30 feet of space.

(1) Use the specially designed AN/PAQ-4A "ARI DRY-FIRE ZERO" target on which a white dot is marked**9 mm below and 41 mm left of center mass of the target** (See Figure 2). (Also see Chapter 4, Own The Night Individual Training Package, for the full-sized reproducible copy of the ARI target). This is the target to use during the zeroing process. Field expedient methods of zeroing the AN/PAQ-4A will be covered at the end of this section.

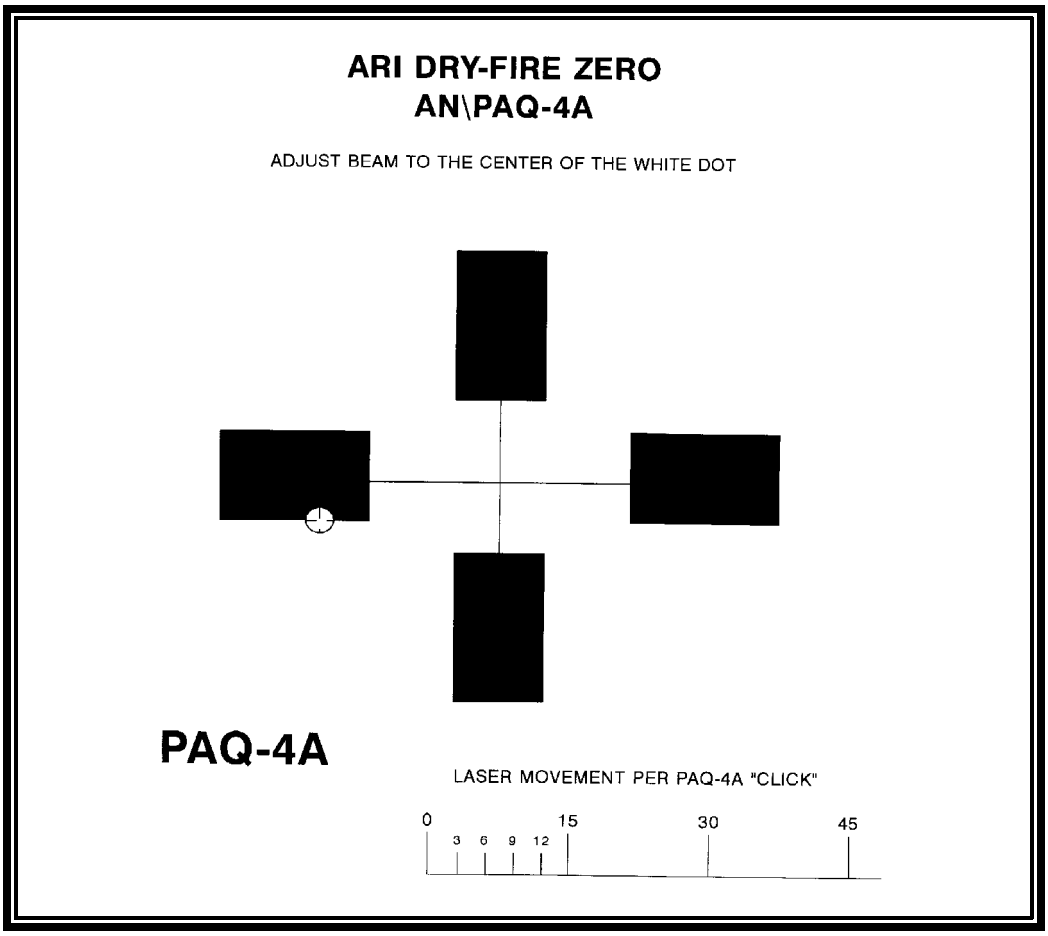


Figure 2

(2) Locate an area with subdued lighting that has a vertical surface (e.g., wall, tree) on which you can attach the 25-meter target. Then measure a distance of 26' 4" (or eight M16A2 rifle lengths) from that vertical surface to the muzzle of your M16A2 rifle. Set up a supported aiming position so that you can hold the rifle very steady while carrying out the AN/PAQ-4A spot adjustment procedure. As soon as it is dim enough for your buddy to see the laser spot clearly with NVG while standing near the target, you can perform the night-time zero.

(3) The AN/PAQ-4A zeroing procedure will be easier if two soldiers work together. Be sure the rifle is clear and on safe. The shooter*who has daylight-zeroed his weapon,* gets into a very steady supported position and lines up his iron sights at center mass on the dry-fire zeroing target. Be sure the rifle is set for 300 meter use (the 3 setting on the rear sight). The buddy will adjust the AN/PAQ-4A knobs to move the spot until it is exactly on top of the white dot at lower left of the target. If it is too dark to see through the iron sights, you can use a flashlight(s) to illuminate the target and perhaps the sights, if necessary.

(4) The buddy doing the beam spot adjustment uses his NVG to see the beam spot. The buddy should try the goggles with and without the pinhole cap on to determine which gives the clearest view of the spot while standing close to the target.

(5) The buddy should use the "screw analogy" to adjust the beam. The top knob on the AN/PAQ-4A adjusts the spot up and down. Using the screw analogy, if the top knob were a screw, turning it clockwise would cause it to screw down. Therefore, turning the knob clockwise will adjust the spot down. Likewise, turning a screw counter-clockwise would cause the screw to come up and out of the hole, so the top knob turned counter-clockwise will cause the beam spot to go up. The knob on the left side of the AN/PAQ-4A adjusts the spot left and right. If the knob were a screw, turning it clockwise would cause it to screw in (go to the right). So, turning the knob clockwise will cause the beam spot to move to the right (and counter-clockwise -- to the left). If you get confused, think what a screw would do and you will know which way to turn either knob to move the spot where you want (i.e., **clockwise** = *down* or *into* the screw hole **{down and right}**; **counter clockwise** = *up* or *out* of the screw hole **{up and left}**).

(6) In adjusting the beam, it works well to move back and forth to the target so you can see the beam spot location very clearly. Make the necessary adjustments while the shooter is relaxing, then have the shooter get a good center mass aim again and recheck the accuracy of the spot placement (on the white dot). This zeroing process takes only about 5 to 10 minutes.

(7) You may find it beneficial to have a third person close to the target using goggles to check the accuracy of the aiming light beam on the dry-fire target. Then the buddy can stand next to the shooter, and simply adjust the aiming light knob in accordance with the directions given by the individual at the dry-fire target.

d. ***Field Expedient Dry-Fire Method.*** To do a field-expedient method to dry-fire zero the AN/PAQ-4A aiming light, all a leader needs to remember is the eight M16A2 lengths away, the 41 mm left and 9 mm down of center mass of a target to zero on. Since most of us do not carry a ruler, we have other means to make these measurements. Using a MRE box, mark a cross the length of a protractor or the straight edge of the lensatic compass on the box. Using the 1:50,000 meter scale on the protractor (lensatic compass scale is the same), mark 2,100 meters to the left of the cross intersection and 500 meters down for where the white dot goes (20 mm is equal to 1,000 meters on the 1:50,000 scale on the protractor). To help aim center mass with the iron sights, blacken four squares 1,000 meters above and below the intersection and 1,500 meters left and right of the intersection using the 1:50,000 meter scale.

e. ***Dry-Fire Zero Summary Checklist.***

(1) Zero your iron sights for 300 meters.

(2) Set the sights of your daylight-zeroed rifle to 300 meters.

(3) Use the AN/PAQ-4A "ARI DRY-FIRE ZERO" target or the field-expedient method.

(4) Be certain your rifle is cleared and on safe.

(5) With a steady supported position, aim your iron sights exactly center mass from 26' 4" away (eight M16A2 rifle lengths).

(6) Your buddy wearing NVG adjusts your laser beam spot until it covers the white dot on the target. Be sure the goggles are properly adjusted for clear vision.

(7) If necessary, a third individual with goggles can be positioned near the target to determine where the beam of the aiming light falls. He can call out needed adjustments to the firer's buddy.

(8) The buddy uses the "screw analogy" to adjust the knobs.

(9) With this ARI dry-fire zero procedure, you should hit targets at 100 meters and perhaps out to 200 or 300 meters.

6. **AN/PAQ-4C AIMING LIGHT.**

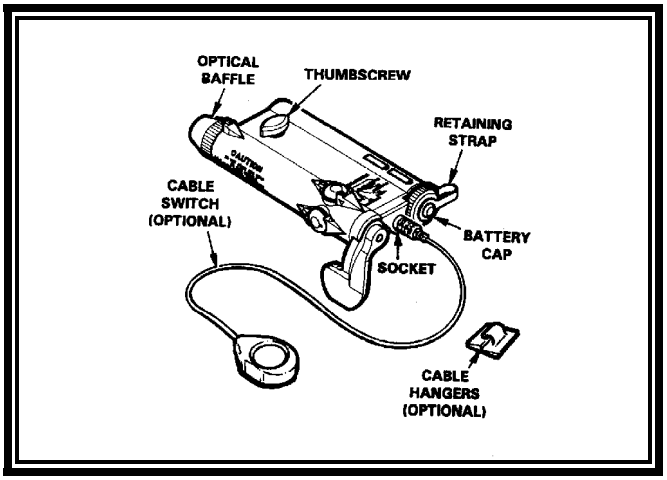


Figure 3

a. ***Characteristics.***

(1) ***Weight:*** 0.8 lbs.

(2) ***Range*****:** 600 meters

(3) ***Power:*** Two AA batteries (BA-3058)

b. ***Components.***

(1) Aiming Light Assembly

(2) Mounting Bracket for the M16A2 and thumbscrew

(3) ON/OFF switch (five-position switch)

(4) Boresight adjusters (azimuth and elevation) - one for moving beam up/down and the other for moving the beam left/right.

(5) Optical Baffle - mounts to front of aiming light that confines the light in a narrow beam, reducing off-axis radiation.

(6) Cable Switch

(7) Operator's Manual - TM 11-5855-301-12&P

c. ***Employment Considerations.*** The aiming light is highly accurate for **medium to long ranges (out to approximately 300m)** when zeroed properly, using the ARI dry or live-fire zeroing techniques. The zeroing procedure in the technical manual (TM) does not work very well and leaves you with one aiming light not zeroed. ***Remember, the aiming light can be seen by anyone equipped with NVG, friendly or enemy.***

7. MOUNT AND OPERATE THE AN/PAQ-4C.

a. The AN/PAQ-4C can be mounted on the following weapons/weapon systems:
(1) M16A1/2 rifle (to include with M203 grenade launcher attached).
(2) M60 machine gun.
(3) M4 carbine.
(4) M249 squad automatic rifle.
(5) M2 machine gun.

b. Mounting and operating procedures are covered in the Operator's Manual (TM 11-5855-301-12&P), Section III.

8. ZERO AN/PAQ-4C USING THE ARI DRY-FIRE PROCEDURES.

a. ***Procedures for Zeroing.*** These procedures make three critical assumptions. First, the firer has a good daytime zero with the iron sights. Second, the initial aiming light adjustments have been made so that the firer's bullets are "on paper" at 25 meters at night. Third, the firer's NVG are adjusted for best visual acuity. All procedures can be implemented with materials readily available within a unit.

b. ***Daylight Zero of Rifles.*** Any rifle intended for night-time zeroing should also be properly zeroed for daytime firing. In the daylight, zero the M16A2 rifle for 300 meters using the standard 25-meter zeroing procedure (rear sight set to the 300-meter setting plus one clickup toward 400 while zeroing). Use this setting for all 25-meter firing. Reference Task No. 071-311-2030 Zero an M16A2 rifle, STP 21-1-SMCT.

c. ***Zero of the AN/PAQ-4C for Night-Time Firing.*** This zeroing procedure involves aiming the iron sights of your daytime zeroed M16A2 rifle at the center of a specially marked zeroing target (placed eight M16A2 rifle lengths, 26 feet-four inches, in front of the muzzle of the rifle) and then adjusting the AN/PAQ-4C aiming light beam to a designated spot that will result in a 250-meter aim light zero. The zero will make the aiming light spot parallel to the strike of the round at 250 meters. It is a nonfiring process so it can be done indoors or outdoors, from subdued light conditions to fully dark. All that is needed is about 30 feet of space.

(1) Use the specially designed AN/PAQ-4C "ARI DRY-FIRE ZERO" target on which a white dot is marked**27 mm below and 17 mm left of center mass of the target** (See Figure 4 below. See Chapter 4 of the 82d Abn Div OTN Individual Training Package for a full-sized reproducible copy of the ARI). This is the target to use during the zeroing process. Field expedient methods of zeroing the AN/PAQ-4C will be covered at the end of this section.

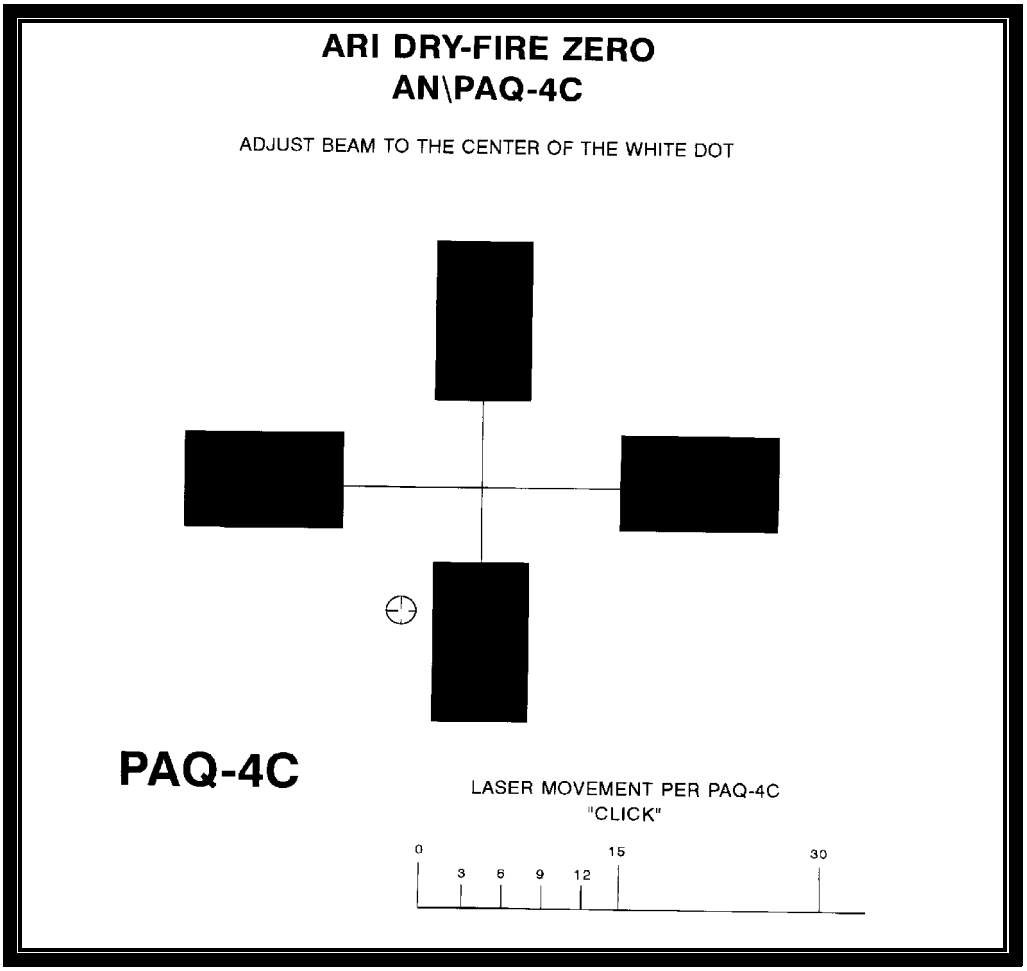


Figure 4

(2) Locate an area with subdued lighting that has a vertical surface (e.g., wall, tree) on which you can attach the 25-meter target. Then measure a distance of 26' 4" (eight M16A2 rifle lengths) from that vertical surface to the muzzle of your M16A2 rifle. Set up a supported aiming position so that you can hold the rifle very steady while carrying out the AN/PAQ-4C spot adjustment procedure. As soon as it is dim enough for your buddy to see the laser spot clearly with NVG while standing near the target, you can perform the night-time zero.

(3) The AN/PAQ-4C zeroing procedure will be easier if two soldiers work together. Be sure the rifle is clear and on safe. The shooter*who has daylight-zeroed his weapon,* gets into a very steady supported position and lines up his iron sights at center mass on the dry-fire zeroing target. Be sure the rifle is set for 300 meter use (the 3 setting on the rear sight). The buddy will adjust the AN/PAQ-4C knobs to move the spot until it is exactly on top of the white dot at lower left of the target. If it is too dark to see through the iron sights, you can use a flashlight(s) to illuminate the target and perhaps the sights, if necessary.

(4) The buddy doing the beam spot adjustment uses his NVG to see the beam spot. The buddy should try the goggles with and without the pinhole cap on to determine which gives the clearest view of the spot while standing close to the target.

(5) The buddy should use the "screw analogy" to adjust the beam. The top knob on the AN/PAQ-4C adjusts the spot up and down. Using the screw analogy, if the top knob were a screw, turning it clockwise would cause it to screw down. Therefore, turning the knob clockwise will adjust the spot down. Likewise, turning a screw counter-clockwise would cause the screw to come up and out of the hole, so the top knob turned counter-clockwise will cause the beam spot to go up. The knob on the left side of the AN/PAQ-4C adjusts the spot left and right. If the knob were a screw, turning it clockwise would cause it to screw in (go to the right). So, turning the knob clockwise will cause the beam spot to move to the right (and counter-clockwise -- to the left). If you get confused, think what a screw would do and you will know which way to turn either knob to move the spot where you want (i.e., **clockwise** = *down* or *into* the screw hole **{down and right}**; **counter-clockwise** = *up* or *out* of the screw hole **{up and left}**).

(6) In adjusting the beam, it works well to move back and forth to the target so you can see the beam spot location very clearly. Make the necessary adjustments while the shooter is relaxing, then have the shooter get a good center mass aim again and recheck the accuracy of the spot placement (on the white dot). This zeroing process takes only about 5 to 10 minutes.

(7) You may find it beneficial to have a third person close to the target using goggles to check the accuracy of the aiming light beam on the dry-fire target. Then the buddy can stand next to the shooter, and simply adjust the aiming light knob in accordance with the directions given by the individual at the dry-fire target.

d. ***Field Expedient Dry-Fire Method.*** To do a field expedient method to dry-fire zero the AN/PAQ-4C aiming light, all a leader needs to remember is the eight M16A2 lengths away, the 17 mm left and 27 mm down of center mass of a target to zero on. Since most of us do not carry a ruler, we have other means to make these measurements. Using a MRE box, mark a cross the length of a protractor or the straight edge of the lensatic compass on the box. Using the 1:50,000 meter scale on the protractor (lensatic compass scale is the same), mark 2,100 meters to the left of the cross intersection and 500 meters down for where the white dot goes (20 mm is equal to 1,000 meters on the 1:50,000 scale on the protractor). To help aim center mass with the iron sights, blacken four squares 1,000 meters above and below the intersection and 1,500 meters left and right of the intersection using the 1:50,000 meter scale.

e. ***Dry-Fire Zero Summary Checklist.***

(1) Zero your iron sights for 300 meters.

(2) Set the sights of your daylight-zeroed rifle to 300 meters.

(3) Use the AN/PAQ-4C "ARI DRY-FIRE ZERO" target or the field expedient method.

(4) Be certain your rifle is cleared and on safe.

(5) With a steady supported position, aim your iron sights exactly center mass from 26' 4" away (eight M16A2 rifle lengths).

(6) Your buddy wearing NVG adjusts your laser beam spot until it covers the white dot on the target. Be sure the goggles are properly adjusted for clear vision.

(7) If necessary, a third individual with goggles can be positioned near the target to determine where the beam of the aiming light falls. He can call out needed adjustments to the firer's buddy.

(8) The buddy uses the "screw analogy" to adjust the knobs.

(9) With this ARI dry-fire zero procedure, you should hit targets at 100 meters and perhaps out to 200 or 300 meters.

9. ZERO AN/PAQ-4A AND AN/PAQ-4C USING THE ARI *LIVE-FIRE* PROCEDURE.

a. ***Preparation for Zeroing.***

(1) ***Modify the 25-meter zero target.*** This is the first step in the live-fire zero designed to help the firer determine the center of target mass and maintain a consistent aim point when zeroing. Using the tan side of a cardboard E-silhouette, stripe the full length and width of the cardboard with 3/4-inch black electrical tape. These stripes should divide the E-silhouette in half, vertically and horizontally. Center and staple the 25-meter zero target at the intersection of these black stripes. The zero target can be removed from the E-silhouette and replaced as needed. See Figure 5 for this target configuration.

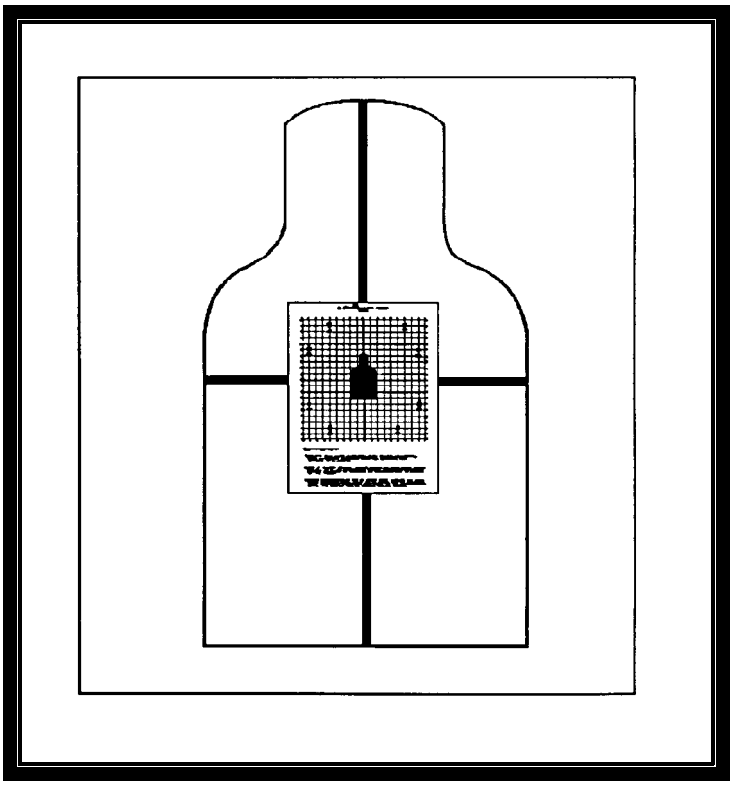


Figure 5

(2) ***Marking 25-meter zero target for bullet impact.***

(a) **AN/PAQ-4A**. When zeroing the aiming light, the firer points the aiming light at the center mass of the 25-meter zero target silhouette. Bullets must hit the target at a "unique impact point." Aiming light adjustments are made until the bullets are centered over this unique impact point. This point for the AN/PAQ-4A is at the intersection of line 9 right and line 3 down (3.1 centimeters right and 2.8 centimeters down from the center of the target) on the 25-meter zero target for the M16A2. See Figure 6.

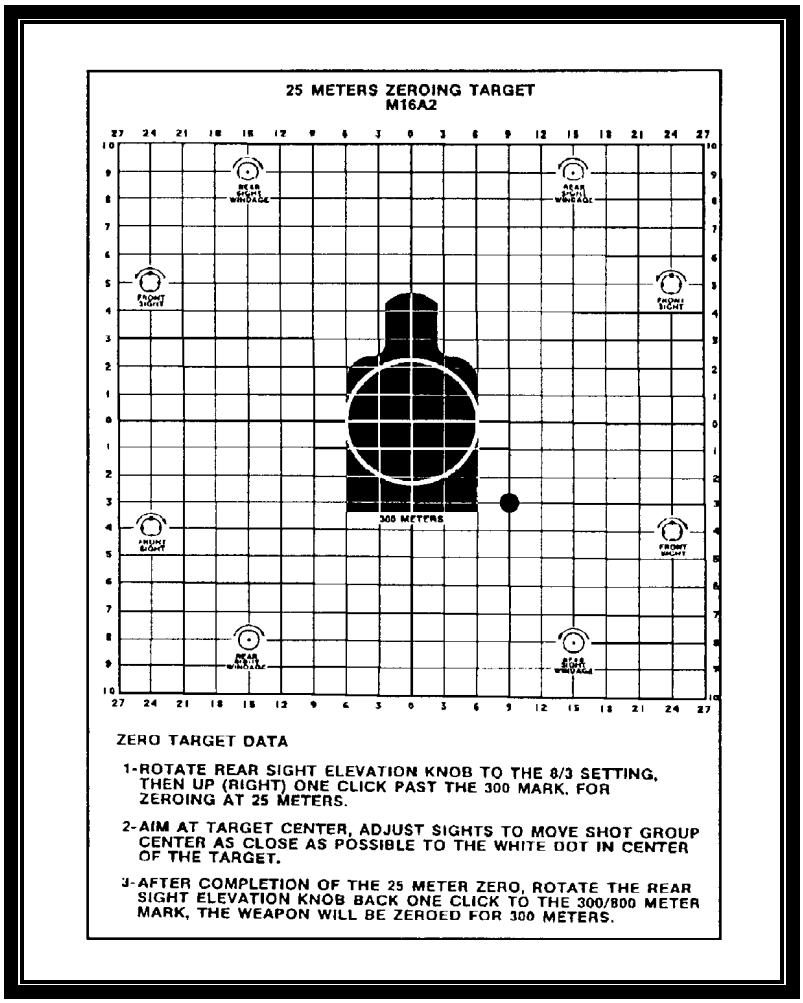

25 METERS ZEROING TARGET
M16A2
300 METERS
ZERO TARGET DATA
1-ROTATE REAR SIGHT ELEVATION KNOB TO THE 8/3 SETTING, THEN UP (RIGHT) ONE CLICK PAST THE 300 MARK. FOR ZEROING AT 25 METERS.
2-AIM AT TARGET CENTER, ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN CENTER OF THE TARGET.
3-AFTER COMPLETION OF THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB BACK ONE CLICK TO THE 300/800 METER MARK, THE WEAPON WILL BE ZEROED FOR 300 METERS.

Figure 6

(b) **AN/PAQ-4C**. When zeroing the aiming light, the firer points the aiming light at the center mass of the 25-meter zero target silhouette. Bullets must hit the target at a "unique impact point." Aiming light adjustments are made until the bullets are centered over this unique impact point. This point for the AN/PAQ-4C is in the "box" bracketed by lines 3 and 6 right and lines 0 and 1 up (1.55 centimeters right and .45 centimeters above the center of the target) on the 25-meter zero target for the M16A2. See Figure 7.

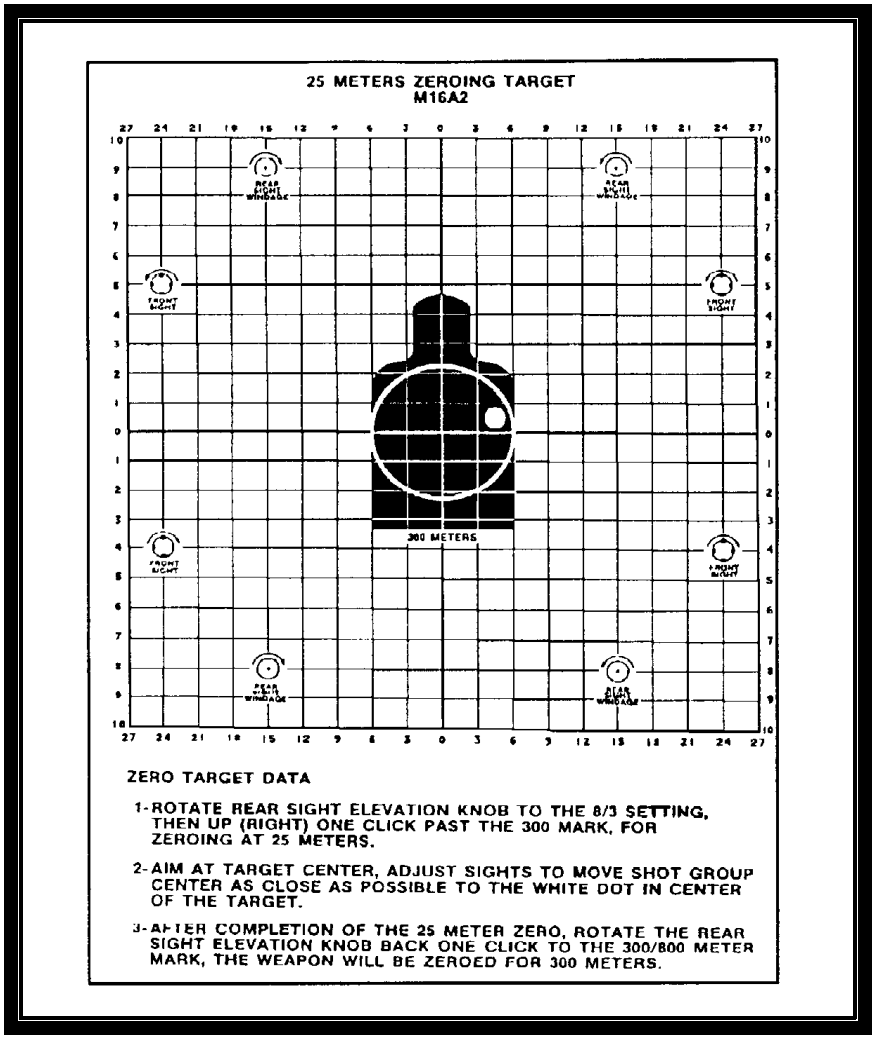

25 METERS ZEROING TARGET
M16A2
300 METERS
ZERO TARGET DATA
1-ROTATE REAR SIGHT ELEVATION KNOB TO THE 8/3 SETTING, THEN UP (RIGHT) ONE CLICK PAST THE 300 MARK, FOR ZEROING AT 25 METERS.
2-AIM AT TARGET CENTER, ADJUST SIGHTS TO MOVE SHOT GROUP CENTER AS CLOSE AS POSSIBLE TO THE WHITE DOT IN CENTER OF THE TARGET.
3-AFTER COMPLETION OF THE 25 METER ZERO, ROTATE THE REAR SIGHT ELEVATION KNOB BACK ONE CLICK TO THE 300/800 METER MARK, THE WEAPON WILL BE ZEROED FOR 300 METERS.

Figure 7

(3) ***Shot-group Size*.** The 4 centimeter circle that is centered on the target is not where the impact of the bullets is impacting (remember you are centering the aiming light beam on this). So this circle needs to be centered over the unique point (intersection of line 9 right and line 3 down). Firers are not as precise at night. Research has shown that the 4 centimeter circle is not a realistic standard for night firing, given the reduced visual acuity at night through goggles and the difficulties in aiming consistently. A 5.5 centimeter circle is better. See Figure 8. (See Chapter 4 of the 82d Abn Div OTN Individual Training Package for a full-sized reproducible copy.) This circle can either be transferred directly onto the target, centered over the "unique impact point," or a transparent training aid with a black 5.5 centimeter circle can be used.

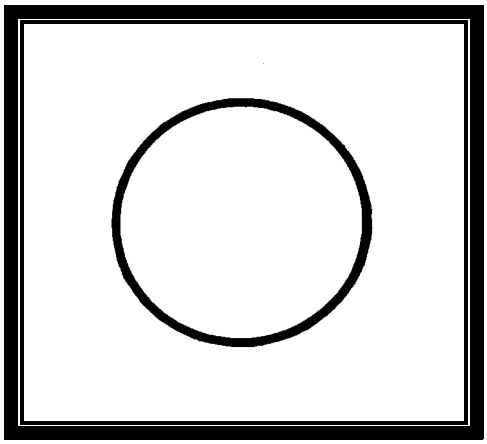


Figure 8

(4) ***Ruler for aiming light adjustments.*** The next step is to use a 12-inch ruler for determining the number of aiming light click adjustments for windage and elevation. ***The vertical and horizontal lines on the M16A2 zero target cannot be used.*** They do not correspond to the click size for the aiming light. Therefore, these lines cannot be used to determine the number of clicks to adjust the aiming light up or down and right or left. When zeroing the **AN/PAQ-4A**, 1/4" (.64 cm) on the ruler is equal to **1 click at 25 meters on the aiming light adjustment knobs, or 1" at 100 meters**. When zeroing the **AN/PAQ-4C**, 4/10" (1 cm) on the ruler is equal to **1 click at 25 meters on the aiming light adjustment knobs, or 1.6" at 100 meters**. Use the ruler to measure the horizontal and vertical distance from the unique impact point to the center of the shot group. During zeroing, place these rulers at each 25-meter target location. See Figure 9 (***Not to scale!***).

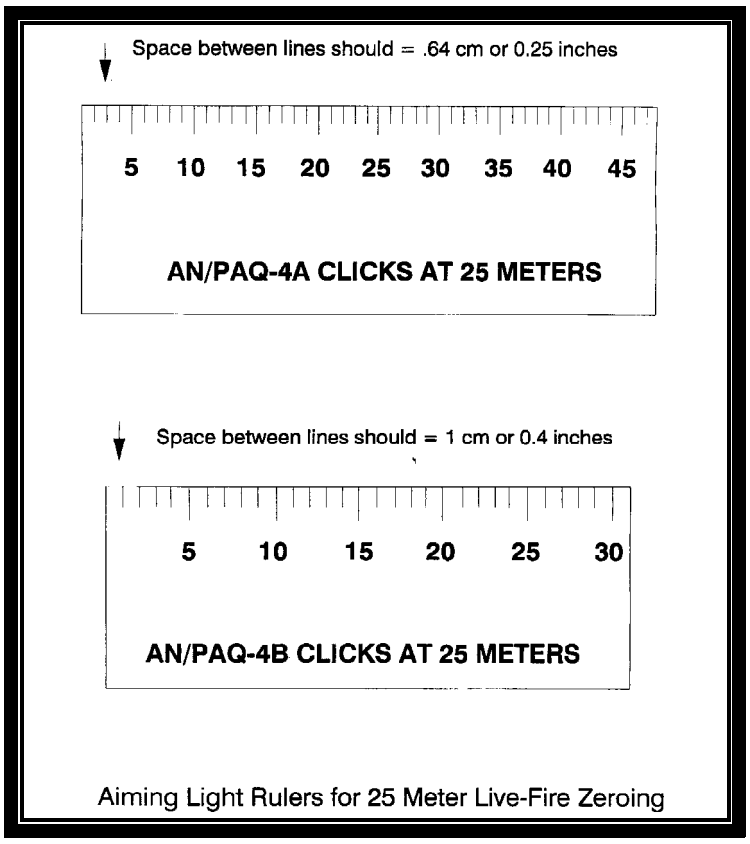

Space between lines should = .64 cm or 0.25 inches
5 10 15 20 25 30 35 40 45
AN/PAQ-4A CLICKS AT 25 METERS
Space between lines should = 1 cm or 0.4 inches
5 10 15 20 25 30
AN/PAQ-4B CLICKS AT 25 METERS
Aiming Light Rulers for 25 Meter Live-Fire Zeroing

Figure 9

(5) ***Aiming light knob adjustments.*** The last step in preparation for zeroing is to make a training aid for showing which direction to turn the aiming light knobs to adjust bullets on the bullet impact point. Experience has shown that the markings on the aiming light knobs can be misinterpreted. Bullets can suddenly go off the zero target, off the E-silhouette, or in the wrong direction because the aiming light was adjusted incorrectly. A training aid shown in Figure 10 helps to correct this problem.

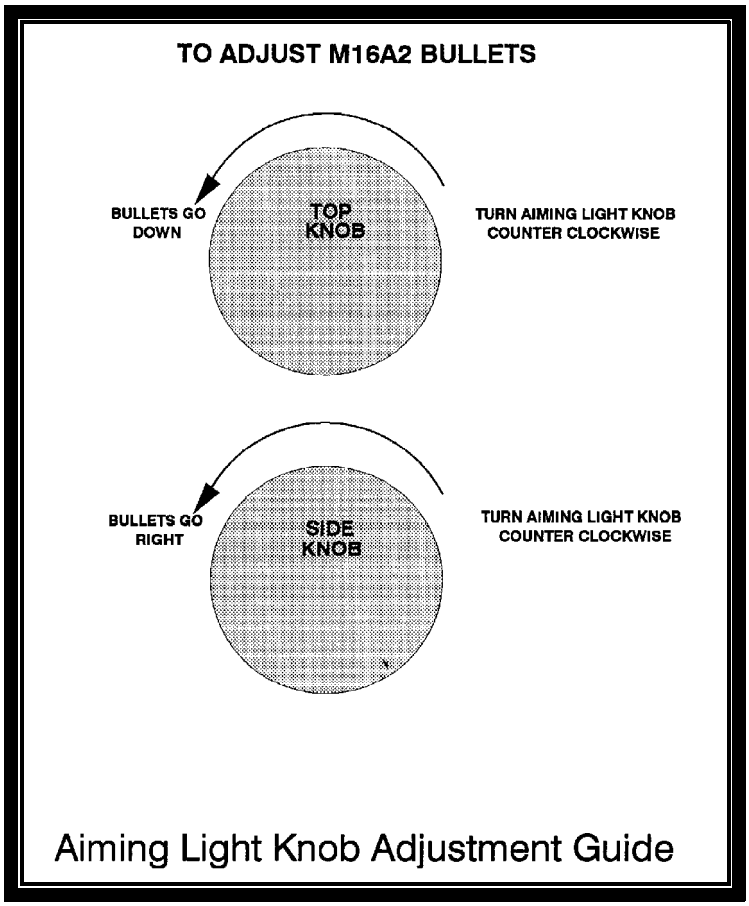


Figure 10

b. ***Zeroing Procedures.***

(1) ***Standard Army Flashlight to light the target.*** The flashlight helps to diffuse the bloom of the aiming light in the goggles and provides a more definitive aim point. Place the flashlight at the firer's position in a V-notched stake. The flashlight can be pointed directly at center mass of the target or slightly below the target, according to the firer's preference. If the amount of ambient light in the night sky is high, a flashlight may not be needed.

(2) Fire two, three-round shot groups before making any aiming light adjustments. This will provide a much better indication of the firer's aim point than a single three-round shot group. This procedure will avoid making premature adjustments and "chasing bullets" in the dark. Triangulate and number each shot group. Determine aiming light click adjustments from center mass of the two shot groups. The goal is to get the shot group within the 5.5 centimeter circle that has either been drawn on the zero target or the transparency is used over the center mass target. Use the aiming light ruler you made up to determine the number of clicks in windage and elevation required to move the strike of the bullet to the desired impact point. Use center mass of the shot group for these measurements.*Check the knob adjustment guide* to ensure adjustments are made in the correct direction.

c. ***Live-fire Zeroing Summary Checklist.***

(1) Striped E-silhouette on the tan side.

(2) Center the 25-meter zero target (that has the offset marked bullet impact point) on the stripes.

(3) Place 12-inch ruler and shot group transparency (if not already marked on zero target) at each 25-meter target location.

(4) Place the aiming light knob adjustment guide at each firer's position.

(5) Shine flashlight on 25-meter target from firer's position.

(6) Fire and mark two, three-round shot groups before the first aiming light adjustment.

(7) Use the aiming light ruler to determine number of clicks for adjustments and transparency to evaluate shot group size.

(8) Check the knob adjustment guide for correct adjustments.

(9) When finished zeroing (usually 12 rounds), the AN/PAQ-4A is zeroed for 100 meters and the AN/PAQ-4C is zeroed for 250 meters✪